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USSR Report

HUMAN RESOURCES

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12 January 1984

**USSR REPORT
HUMAN RESOURCES**

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LABOR

LABOR RELOCATION AS FACTOR OF AGRICULTURAL POLICY ANALYZED

Siberian Rural Areas

Moscow PRAVDA in Russian 13 Sep 83 p 3

[Article by L. Fuks, sector chief of Siberian Zonal Scientific Research and Design Institute of Standard and Experimental Designing of Residential and Public Buildings (Novosibirsk)]

[Text] One might say that the countryside is the mother of the cities. The urban population took the lead in terms of numbers long ago. But the greater this disparity, the more strongly the cities and the society depend on the state of affairs in rural areas. Therefore, as the cities develop one cannot leave the countryside as it was before. How should it be? What can urban planning give to its socio-economic development?

Traditionally, the following questions come to the fore: How many and what kind of villages are needed in one region or another? How does one regulate their distribution? It is thought that correct answers will help to increase the effectiveness of planning of agricultural production, the financing of construction and the development of transportation and the sphere of services.

But the questions themselves contain an undoubted recognition of the need to restructure the settlement in rural locations. But this is not at all indisputable, and it is predictable only in two cases: if the existing network of villages is not a result of their predictable interconnected development, but a systemless formation which has lost its expediency; or if the well-known thesis about the great inertia about the processes of settlement, which do not keep up with the changes in the development of agricultural production, turns out to be correct, then the network of villages must inevitably be restructured, bringing them up to the level of the requirements that have arisen.

What in fact is taking place? Never before have the changes in resettlement been as significant as now. They are brought about by the increased influence of the city and the appearance of previously unavailable opportunities to actively restructure the rural way of life, to consolidate more or less developed villages and to eliminate small ones. Agricultural production does

not always keep up with these changes. Therefore the farms still need relatively small villages. But in a number of zones of the country the number of these villages and the population in them are decreasing fairly rapidly, and sometimes farms and other agricultural enterprises that are still quite functional are prematurely eliminated. In Novosibirsk Oblast farms were investigated in four rayons, and there is reason to assume that by 1990 approximately one-fifth of the accommodations for dairy cows in standard premises will be unutilized or will be operating in "unpromising" villages which are on the verge of disappearing. As one can see, if there is inertia, it is in the development of the production infrastructure, technology and organization of agricultural labor, but not in the development of villages.

Tasks for further advancing agriculture have been earmarked in the USSR Food Program. In connection with this, the time has come to refine the idea of the inevitable backwardness of resettlement and the need to accelerate its restructuring, and also to increase the reliability of the prediction of the development of the network of settlements.

Analysis of previously conducted urban construction and relocation prognoses shows that many of them diverge considerably from the actual changes. For example, the overall number of rural population in Omsk Oblast by the end of the predicted time period, envisioned in the technical and economic substantiation for its development, turned out to be one-third less than was expected. The main reasons for the lack of agreement between the predictions and the actual evolution of the network of villages is the poor study of factors and laws governing these processes, the possibilities of improving them, and the limited utilization of the achievements of economics, sociology, demography and other scientific disciplines.

In certain regions of the country the rates of reduction of the number of people working in agriculture are higher than the rates of increase in labor productivity. Naturally, in these cases it is necessary to hold back the migration of the population so that it conforms to the social development of the villages and the improvement of the service for their residents. But here too, many villages are "unlucky." As we know, large consumer service institutions and enterprises are more economical. But it is also expedient to create them only in large villages which have been consolidated by eliminating small ones and transforming them into villages of an urban type. It is thought that this way one can "close off" the main channel of migration from the countryside to the city. Many villages with little population have been eliminated in the past 20 years. Some of their residents have moved to larger ones and villages whose development has been planned. Now large villages are beginning to "break themselves down" more intensively, especially in the sparsely populated regions of Western Siberia. There are 10 times more villages with a population of more than 10,000 which are breaking down there than there are growing villages of this size. The assumption about the reliable retention of the labor force has not been justified.

The problem of intensification of agricultural labor has become more critical, and the density of the population has decreased. With increased distances between the populated areas, expenditures on intrafarm transportation have increased, the production cost of agricultural products has increased, and the volume of their production on private subsidiary farms has decreased. Because of the improper consolidation of villages, cultural and domestic construction has produced schools, clubs and other public buildings which are overcrowded and cost too much.

But is the theory about the optimal size of villages correct? For many large villages near cities are growing, while remote ones are losing their population. This means that their size itself has little to do with anything. In sparsely populated regions the consolidation of villages in general is illogical--they do not have the demographic resources. And if they are consolidated by drawing people from other regions, what will happen to the reconstruction of the villages themselves?

A study of the migration of rural residents has showed that they will leave any kind of village: the flow goes in the direction of the more developed ones. Instead of leaving large villages or villages that are near cities, some of the residents leave small cities. While the number of small cities has decreased, the migratory losses of large population points are not compensated for, and they become sparsely populated. As a result, the previous ratios of villages of various sizes is restored (although there is a smaller overall number of villages)--the mechanism of self-regulation determines their composition. So small villages are a natural part of the system of settlements. Attempts to eliminate this part do not produce a long-term effect and only accelerate the movement of migrants from the countryside to the city.

The results of the research convince us of the need to revise the evaluation of rural relocation. The fact is that the apparent disorganized totality of villages and connections among them are a system. And the more diverse the types of population points and relations between them, the more developed and stable they are. Therefore the optimal sizes of individual settlements cannot be regarded outside the entire system of population relocation. One of the main indicators of its development is the density of population points, on which the ties among them depend. The density of the population is especially important in regions that are distant from large centers. Here the "thinning out" and unthought-out consolidation of villages reduce the intrarural migration, but increase the flow of people migrating to the cities and to economically stronger regions. And the natural development and self-regulation of the network of villages impedes this outflow and affects the process of elimination of villages and reduction of their population, which works to the advantage of agriculture. Therefore in resettlement it is necessary to shift the focus from attempts to reduce the outflow of population from villages to a reduction of migration from rural areas. Then the breakdown of villages and the depopulation of remote regions will slow up.

In my opinion, in general the future of the majority of villages will involve a gradual breakdown, since a reduction of the overall rural population is predictable. The main reason for this is related to technical progress in agriculture, which makes it possible to increase the volume of production with a reduced number of workers. Differences in the standard of living of urban and rural population also have an effect here. The influence of social factors can be reduced, but it is impossible to eliminate the influence of economic factors. Regardless of how large villages may be, many of them will lose population. This must be taken into account in predictions of the development of production, service for the population and restructuring of the network of villages.

A further breakdown of some of the rayon centers is also possible. Even now in Western Siberia approximately every third center is breaking itself down. In these conditions it is necessary to strive to retain the population in them, to reduce migration and not to consolidate them at the expense of villages, which is unrealistic. But still many general plans for the development of rayon centers envision increasing the population.

As we know, improved public service is "intended" for large villages. But if the number of residents in a village decreases, it is necessary to reduce the network of municipal and domestic institutions as well, and this increases the outflow of population. The outflow of population is also increased by excessive centralization of services in the rayon centers and cities. The fact that rural residents are frequently forced to go to the city for services also increases their desire to move there completely. Consequently, today's principles for the construction of the system of services does not impede migration, but accelerates it.

The results of the research convince us that it is expedient to restructure not the network of settlements, but the system of services for their residents, and its effectiveness should be evaluated not in terms of the departmental effectiveress, but on the basis of statewide interests, a higher standard of living in rural areas, retention of the rural population and growth of production. It is important for service organizations to take into account the peculiarities of relocation in various zones of the country.

Now in the most populated zone of Western Siberia there are stores in each village, beginning with those with 500 residents, and schools and clubs in villages beginning with 1,000 residents. In the most sparsely populated zone there are stores in each village, beginning with 50 residents, and schools and clubs, beginning with 100 residents. But there are no standard plans for public buildings for small villages. Institutions are located in unrehabilitated old buildings or they construct clearly unsuitable standard ones--which are larger than necessary. This is why, for example, in many schools in villages of Novosibirsk Oblast there are 3-4 times more accomodations than there are students, and sometimes 10 times more. Erecting "suitable" buildings would make it possible to reduce expenditures on construction, but the plans are still being created mainly for large villages. In the list of kinds of buildings for standard designing which was approved in 1982, the smallest store is for a village with a population of approximately 500, the smallest primary school--for a village with 400 residents, and so forth.

The construction of buildings with small capacities certainly does not reduce the quality of service if things are organized intelligently. For instance, in a number of cases one salesman could work in the stores of several small villages one at a time. It is possible to use motorized stores, motorized clubs and other mobile facilities more extensively. Of course, it is necessary to have all-weather transportation. But services in small villages can be improved without making them significantly more expensive.

As we can see, transforming villages into settlements of an urban type and giving them an "urban way of life" are not always to the advantage of rural areas or, in the final analysis, to the city either. Therefore there is something to revise in the current theory of urbanization.

Of course, these recommendations cannot be regarded as universal, but, in my opinion, they correspond to the needs of the next few decades. It is not impossible that in the next stage of the transformation of the countryside it will be necessary to return to the problem of consolidating villages on a new basis. But then new problems will arise which will require other solutions.

Never before in our country's history have tasks of social development of rural areas been resolved on such a broad scale as in the past decades. We have managed to achieve a great deal although the newness of the problems and the diversity of conditions in dissimilar regions of the country, and the imperfect cooperation of efforts of representatives of various sciences have impeded the implementation of what has been earmarked. A good deal of experience has been accumulated in the transformation of rural areas, including in Siberia. It must be creatively utilized during the course of the implementation of the tasks set by the USSR Food Program.

Relocation as Economic Growth Factor

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 10, Oct 83 pp 22-28

[Article by L. Krants: "Relocation as Factor in Growth of Economies of Sovkhozes and Kolkhozes"]

[Text] Under the conditions of the increased volumes of animal husbandry and crop growing products that are produced, the complication of technology and agrotechnical equipment for production, and the increased technical supply for the sovkhozes and kolkhozes, the solution to the problem of considerably increasing the effectiveness of the branch of agriculture is large related to the creation of favorable territorial prerequisites, that is, the provision of scientifically substantiated distribution of the interacting constituent parts of production: fixed production capital, agricultural land and labor resources.

Let us discuss only one of the aspects of the organizational and economic structure of the agricultural enterprise which is related to the territorial relocation of the workers. It is known that a correct distribution of the labor resources of a business reduces the time of travel to the working places,

facilitates the maneuvering of labor force and, consequently, provides for more effective use of it and improves the utilization of agricultural equipment. In practice, the solution to this problem is related to a determination of the position of the places of residence of the labor resources that participate in the production process with respect to the places where they apply their labor. And this, in turn, conditions the distribution of housing, and cultural-domestic and production construction in rural areas.

The accelerated development of the agro-industrial complex and the rural social infrastructure envisioned by the Food Program increases the urgency of coordinated distribution of those elements of the territory whose position has been determined and reinforced for many decades. These include villages, animal husbandry farms and complexes, processing enterprises and objects of the production infrastructure.

The national economic significance of territorial organization of the population, which is materialized in the form of a network of population points, consists primarily in that this process is related to the distribution of labor resources which, in the words of V. I. Lenin, are the primary productive force of all mankind (see: Lenin, V. I., "Poln. Sobr. Soch." [Collected Works], vol 38, p 359). Participation in solving the problem of the distribution and development of productive forces and solving the country's food problem is an important aspect of the content of the process of transforming the network of rural population areas.

Efficient distribution of the labor resources of a sovkhoze or kolkhoz is established when the intrafarm relocation of personnel is justified. It turns out not to be a simple matter to reveal the most expedient system for permanent distribution of population and labor force within one farm under the conditions of decentralization of production and the breakdown of the network of population areas. Indeed, on the majority of sovkhozes and kolkhozes the existing network of population areas involves several population points, frequently 10-15 and more. In addition to the functionally leading centers of the farm--central farmsteads and centers of production subdivisions--there is a large number of settlement areas that serve individual farms or cultivate sections of land. These population points are located in various parts of the land utilized by the farm on an area of 3,000-6,000 hectares, located from 1-2 to 10 kilometers from one another, and taking turns with the fields of the crop rotation, natural feed land, economic centers, farms and individual production structures. The network of population points, the agricultural territory that is used and the production facilities, working together, form the complicated production and population system of the farm, for which differentiation of villages in terms of their functional purpose and administrative role is typical.

The picture of the distribution of the population and labor resources which has come down to us is the result both of general historical factors and factors that have arisen during the years of Soviet power, and, especially recently, measures for the development of agriculture and the sociocultural transformation of rural areas. Here questions of redistribution of workers are frequently resolved on the basis of current needs of agricultural production, sometimes without a clear idea of the efficient forms of the distribution of the

population in the future. It has been necessary to carry out individual tasks: bringing the places of residence of individual contingents of workers closer to labor-intensive productions, creating conditions for the observance of the normal working cycle of young farms, retaining machine operating personnel, and so forth.

But the solution to individual aspects of the problem of distributing labor resources does not remove from the agenda the need for an overall ordering of the settlement of the population in the network of population areas as the spatial basis for the socio-economic development of the farms.

Under the conditions of the existing network of population points, the farms can theoretically have a multitude of variants of the distribution of residents and labor resources. One can provide for consolidation of certain villages at the expense of others while retaining the existing population structure, reducing the number of population points, and forming new villages in addition to those that already exist. In order to find the only correct solution, which corresponds most to the interests of the development of the farm in each individual case, it is necessary to have a quantitative evaluation of the effectiveness of the analyzed variants of intrafarm distribution of the population. The task consists in singling out the forms of organization of the population which create the best prerequisites for carrying out agricultural production.

When evaluating the effectiveness of possible forms of intrafarm distribution of the population, a comprehensive approach is needed. It is necessary to foresee the nature and scale of the consequences of one or another direction for the development of the network of villages on the economy of production and construction, the organization of the social and production infrastructure, and the demographic and ecological situation on the territory of the farm.

Among the most significant indicators for selecting efficient intrafarm location of the population are those that characterize the economy of production in the sphere of crop growing and animal husbandry. For correct organization of the labor resource in the "crop growing shop," which encompasses a large farm territory, the factor of the distribution of the labor force is of exceptional significance, and this will continue to be the case in the distant future as well. If in animal husbandry there is a tendency toward consistent consolidation of production units, which leads to increased spatial localization of them, in the production of crop growing products (including feeds), which involves the utilization of land resources, in the foreseeable future the tendency will continue to be toward decentralization. Hence it follows that objectively there must exist a close interconnection and interdependency between the form of intrafarm distribution of residents (labor resources) and the conditions for carrying out farm activity in the agricultural enterprise. It is quite obvious that a study of the mechanism of this interconnection and the disclosure of the existing patterns will make it possible to formulate the requirements for the developing production of the sovkhoz or kolkhoz on the organization of the intrafarm network of population areas.

In this article we have generalized certain results of research that has been conducted regarding this issue. The task included using extensive empirical material to reveal the most expedient forms of distribution of the population and ways of developing them in a number of regions of the country, forms which have been confirmed by the practice of agriculture. Turning to practice makes it possible, to some degree, to earmark the orientation points for selecting forms of intrafarm distribution of the population which is desirable from the standpoint of the interests of intensive development of agriculture in the modern stage.

The nature of the interconnection among factors in territorial organization of agricultural production and distribution of the population has been determined by the graph analytical method. For this each of the factors was represented by a general indicator. The form of interfarm distribution of the population was evaluated by a calculation index, which in their totality reflected the density of the population (resources) and the degree of the lack of uniformity of its distribution among the population areas of the farm.

The level of development of agricultural production of the sovkhoz (kolkhoz) was measured by the amount of general production expenditures in crop growing in rubles per 1,000 rubles of gross agricultural output.

The quantitative measurement (evaluation) of the form of intrafarm distribution of the population is one of the most difficult methodological problems because of the many ways of measuring the phenomenon under consideration. For these purposes it is suggested that one determine the index according to the formula, which defines the possible cases of the distribution of population points and population:

$$\Psi = \frac{\gamma L(n+1) \sum_{i=1}^m H_i^2}{\left(\sum_{j=1}^n H_j R_{ij+1} \right) \left(\sum_{i=1}^m H_i l_{i+1} \right)}.$$

L--territory of the farm;

H_i --number of population (workers) of i-village of the farm;

R_{ij} --distribution from i-village to another neighboring population point in j direction;

n--the number of radii (vectors) directions between population points of the farm;

l_i --distance from i-village to the imaginary center of labor load of the farm;

m--the number of population points on the territory of the farm;

Ψ --coefficient which adjusts the amount of the index.

But if one proceeds from the notion that linear, mainly planning, structures of rural villages practically exclude cases where $l_i=0$, the calculation formula can be simplified for two possible types of intrafarm systems of settlements: with more than one population point--

$$\psi = \frac{\gamma L_n \sum_{i=1}^m H_i^2}{\sum_{i=1}^m H_i R_{ij} \sum_{i=1}^m H_i l_i};$$

with one population point--

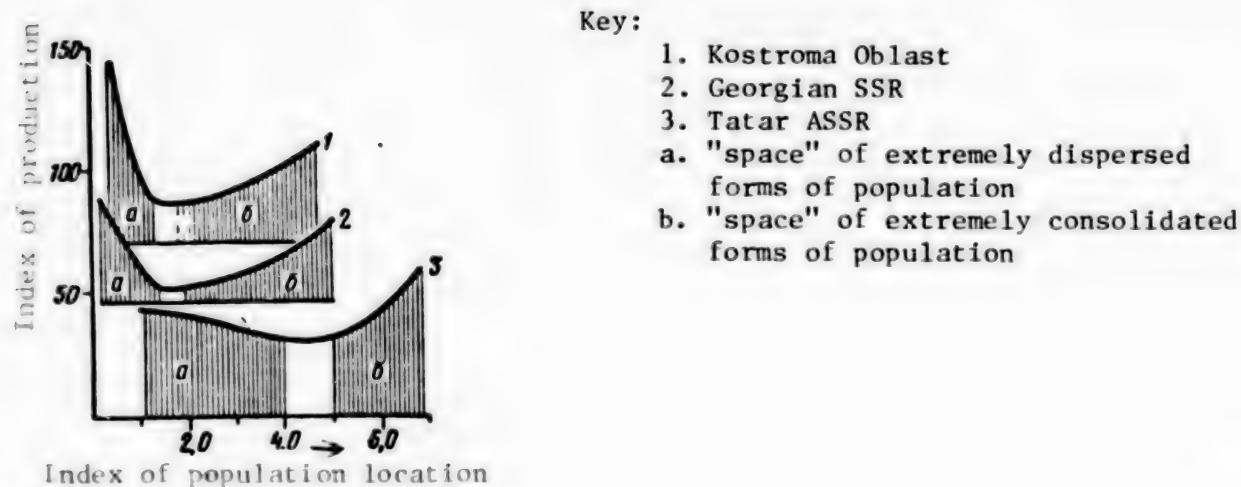
$$\psi = \frac{\gamma L_n \sum_{i=1}^m H_i^2}{\sum_{i=1}^m H_i l_i}$$

The more concentrated form of population will correspond to the larger value of the calculated index.

For a more precise reproduction of the function of the variables under consideration, in addition to the method of statistical groupings, electronic computers were used. The experience in machine processing of the data showed that in order to obtain reliable results, it is necessary to observe the requirement of the homogeneity of the mass of objects in terms of characteristics of specialization and forms of organization of production. By investigating this mass, which includes 98 objects (farms) of a number of rayons of the Tatar ASSR, it was possible to establish that the unknown function is described by a polynomial of the third degree (Figure 1, Graph 3):

$$y = 43.0 + 5.3x - 4.3x^2 + 0.56x^3$$

Figure 1. Function of variables of indices of intrafarm production and distribution of population in a number of regions of the country.



The same pattern is confirmed by an analysis of another group of farms (26 objects) which was formed according to the principle of the similarity of the level of economic development (Figure 2, Graph 3):

$$y = 69.4 + 18.1x + 1.14x^2 + 0.14x^3$$

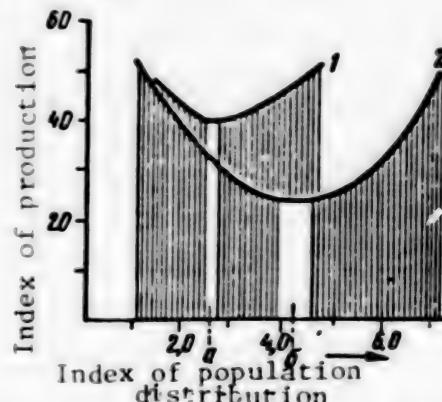
Figure 2. Function of variable indices of intrafarm production and distribution of the population for farms with various levels of economic development (using the example of the Tatar ASSR).

Key:

1. Farms with low level of economic development
2. Farms with high level of economic development

Extreme limit of concentration of population

- a. on farms with low level of economic development
- b. on farms with high level of economic development



The interdependencies of the forms of interfarm distribution of the population and the level of development of agricultural production that have been investigated here give justification for a number of general and more particular conclusions. From the standpoint of the creation of favorable territorial prerequisites for increasing the efficiency of agricultural production, the consolidation of the intrafarm network of settlements is expedient only within certain limits (Figure 1, "a"). Further consolidation of the network of population points leads to a sharp deterioration of the results of the production activity of the farms, labor productivity and the gross output per hectare decrease, and expenditures in the sphere of production increase. This pattern can be traced in the graphs that are presented, moving from the zero value of the coordinates in the direction designated by the arrow. The consolidation of the network of population points, that is, the reduction of the number of rural population points and the increase in the number of residents in them, simultaneously causes an increase in the area of the farm territories served by one village, which inevitably leads to increased travel time to work and cargo shipments.

On farms with an extremely consolidated network of villages (Figure 1, "b"), in all probability, they have surpassed the expedient limit of concentration of population under the conditions of an insufficiently high production and technical potential and inadequately formed transportation communications, when the increased radii of technological ties stand in contradiction to the conditions for their realization.

In various regions of the country agricultural production places different demands on the level of concentration of the rural residents, which is shown by the fact that in the regions of the country that were investigated the indicator of maximum effectiveness of production corresponds to various values of the index of population concentration.

This circumstance is explained primarily by the peculiarities of the base condition of the population distribution and the conditions for farming. For example, the conditions in Kostroma Oblast are characterized by small-villages, with an extremely broken up network of population points, which is typical of the entire Nonchernozem Zone. To this one should add the large number of small farms which is typical of these areas and the shallow contour of the agricultural land. In the Nonchernozem Zone of the RSFSR, which includes Kostroma Oblast, the sections of arable land up to 5 hectares in size comprise a total of 5.7 million hectares, or more than 18 percent of the entire area of arable land (see: Rodin, A. Z., Sigayev, M. P., Tananakin, Ye. I., "Intensivnoye ispol'zovaniye zemel' v Nechernozemnoy zone" [Intensive Utilization of Land in the Nonchernozem Zone], Moscow, 1980, p 17). An important circumstance is the poorly developed network of paved highways in the oblast. Many farms do not have roads like this at all.

With the aforementioned base conditions, the consolidation of the network of villages is permissible only on a strictly limited scale. A radical breakdown of the existing system of settlement can disturb the labor and production ties which have become established and adapted to local conditions for economic activity. It is not now desirable to have a sharp increase in the concentration of population in central villages of the farms, which, what with the lack of roads and the territorially dispersed of agricultural land, will create difficulties for normal utilization of productive land, will increase the proportion of trips without loads, idle time of technical equipment, and expenditure of energy resources and will complicate the administration of the farm, that is, the effectiveness of production as a whole can decrease.

In the modern stage, interfarm distribution of the population with the parameters presented in Table 1 corresponds most of the interests of the development of agriculture.

For those farms of Kostroma Oblast in which the concentration of the population is greater than the indicated parameters (a greater number of villages, a smaller size of the central village and other villages, a higher proportion of villages with a number of residents less than 100, a smaller area of agricultural land per one population point), the characteristics that are presented can be regarded as a goal for the near future. These farms comprise 53 percent of the overall number. On farms which have achieved a higher concentration of labor resources, the contradictions between the distribution of population and production can be removed as a result of accelerated construction of the network of paved highways.

In the Tatar ASSR the existing network of rural villages is relatively large. The index of intrafarm distribution of the population exceeds the corresponding indicator for farms of Kostroma Oblast 1.6-fold. The republic has more favorable conditions for farming. The sections of land form fairly large areas, which makes it possible to apply powerful, highly productive technical equipment. On the whole, the output per 1 hectare of agricultural land here, exceeds the gross output 1.6-fold. The network of paved highways is considerably better, and its density exceeds that in Kostroma Oblast 4-fold.

Table 1. Parameters of Intrafarm Distribution of Population Which Correspond to the Requirements of Agricultural Production in the Current Stage*

Investigated Regions	Specialization of agricultural production	Average number of population points per farm (units)	Sizes of population points (residents)			Proportion of population points with up to 1,000 residents (%)	Area of agricultural land per 1 population point (hectares)
			Central village	Other villages	Villages		
					Residents (%)		
Kostroma Oblast	Flax-potato-dairy	6-12	240	90	about 70	250-400	
Tatar ASSR	Vegetable-potato-dairy	3-7	800	360	20-70	1000-1950	
Georgian SSR	Animal husbandry	4-6	650	350	0-25	300-450	
	Tea growing	2-4	1400	850	-	350-500	
	Grape growing	1-2	1900	1300	-	1200-2000	

*The parameters of the distribution presented in the article and positively evaluated should not be equated with ideal models recommended for the distant future.

The maximum effectiveness of agricultural production which corresponds to the existing production and population settlement conditions is provided with a higher concentration of population than on the farms of the Nonchernozem Zone.

It would be expedient to bring the more dispersed intrafarm systems of villages of the republic, which comprise 64 percent of the overall number of farms, up to the level of the indicators that have been presented. In other cases measures should be conducted which do not involve essential quantitative changes in the network of rural population points. They include consolidation of the material and technical base of developing central villages, especially the sphere of services, in combination with the construction of highways, the renovation of the construction fund and, if necessary, the construction of cultural and domestic institutions for daily use where there are not enough of them in the villages and the modernization of these villages.

For conditions of the large-village system of distribution of the population and intensive agriculture in the Georgian SSR, the organization of the network of villages on the kolkhozes and sovkhozes, which is rational from the standpoint of production requirements, is essentially differentiated, depending on the specialization. The most concentrated forms of distribution of the population are acceptable for farms that specialize in raising grapes. In this case the interests of agricultural production are not contradicted by the formation on the farm of one or two large villages with up to 1,300-1,900 residents, which provides for relatively better transportation. The situation is different in mountainous animal husbandry rayons. Here the possibilities of consolidating the network of villages are extremely limited because of the territorially separated forms of production. Hence the technologically conditioned need for a ramified network of small population points. At the present time agricultural work is promoted by retaining 4-6 population points (with up to 350-650 people) on the sovkhoz or kolkhoz, each of them having 300-450 hectares of agricultural land.

The functions of production and distribution of the population that were obtained confirm the high economic effectiveness of regulating the intrafarm network of villages. As a result of this measure, individual general production expenditures in crop growing can be reduced to an average of two-thirds-ten-seventeenths the previous level.

In terms of production, the most effective forms of interfarm distribution of the population show that in the modern stage it is necessary to have a sufficiently ramified network of settlements. Therefore the question of sharply reducing the number and consolidating the economic centers should be considered to be premature in the majority of regions of the country.

Conditions that are unfavorable for the development of agriculture arise both with excessive decentralization of the workers and with excessive concentration of them in population points. But both of these conditions of distribution of population are essentially differentiated for the various regions. For example, the intrafarm network of population points that is characterized as dispersed in the Georgian SSR, can be a variety of the concentrated forms of population distribution in the Nonchernozem Zone of the RSFSR.

It is possible to single out the following priorities in the development of the intrafarm systems of distribution of the population, depending on their correspondence to the requirements of agricultural product

qualitative improvement of the network of population points (improvement of their material and technical base and road and transportation communications) without significant redistribution of the population (when the forms of distribution of the population correspond to the requirements of production);

limited consolidation of the network of populated areas to the level that corresponds to the interests of production, as a result of a certain reduction of the number of villages and redistribution of the population (in the case of excessively concentrated population);

accelerated development of the network of paved highways and improvement of the transportation support (with extremely consolidated forms of population).

The conclusion about the mandatory correspondence between forms of intrafarm distribution of the population and the level of development of the agricultural enterprise is methodologically important. An efficient system for mutual development of intrafarm production and distribution of the population can be characterized as a process of dynamic balance in which the production factor plays an active role. Achieving a higher level of this changes the requirements on the distribution of labor resources and fixed capital on the territory of the farm and more or less sets the "program" for the transformation of the existing system of distribution of the population. This means that tasks of transforming the network of rural population points of the farms and the entire course of their implementation in various stages must be coordinated with the growth rates of productive forces, the level of technical support, the improvement of organizational and structural forms, and the achieved and planned scale of production. On farms that are economically relatively weak it is permissible from the standpoint of the interests of production to have a limit of concentration of the population that is lower than that on economically developed ones (Figure 2). All other conditions being equal, a higher level of production potential of the kolkhozes and sovkhozes stimulates a consolidation of the intrafarm forms of distribution of the population.

The concrete differences in the parameters of the network of populated areas on the farms with varying levels of economic development can be traced from the data in Table 2. On developed farms more consolidated forms of distribution of the population correspond to carrying out the production tasks. But in the present period the kolkhozes and sovkhozes with a high level of economic development comprise 10-20 percent of the overall number of farms that were investigated. And under the conditions of poor overall socio-economic development, a dense network of population points is more justified, one which has a favorable effect on the economies of the sovkhozes and kolkhozes. With a high level of economic development, the correspondence of forms of distribution of the population to the requirements of production provides for a reduction of the proportional general production expenditures that exceeds that on economically weak farms 1.7-1.8-fold.

Table 2. Parameters of Intrafarm Distribution of Population Corresponding in the Current Stage to Requirements of Agricultural Production with Various Levels of Economic Development of the Farms (using example of Tatar ASSR)

Level of economic development of farm*	Number of population points on farm (units)	Sizes of population points (residents)		Proportion of population points with up to 100 residents (%)	Area of agricultural land per 1 population point (hectares)
		Central village	Average for farm		
Low	3-7	up to 650	up to 290	25-70	750-1950
High	1-4	up to 1750	to 1000	-	2700-3700

* The level of economic development of the farms was differentiated according to a complex of indicators: volume of gross output, labor productivity, provision with fixed capital, including buildings and structures.

In any case, increased provision of paved roads and means of transportation is a factor which reduces the urgency of raising the level of concentration of population as a result of moving residents from certain population points to others (with a change in the place of residence). With a satisfactory solution to the road and transportation problem, there are increased possibilities of efficient maneuvering of labor resources and agricultural equipment in keeping with the needs of production. The system of distribution of the population acquires a kind of "flexibility" (elasticity), as a result of which the demands of production and the population can be satisfied more efficiently.

This is precisely what explains the fact that with a higher level of economic development there is a greater range of forms of distribution of the population that are acceptable for the farms. The intervals between solutions concerning territorial organization of the intrafarm network of populated areas which are equal or close to each other in terms of effectiveness increases. This pattern shows that the rigid mutual conditionality of the development of production and rural population areas becomes weaker as the socio-economic potential and the technical level of the sovkhozes and kolkhozes increase.

Thus the results that were obtained show that accelerated population of villages and consolidation of developing population points as a result of this, if they are not prepared for by the entire course of the development of the productive forces of the sovkhoz or kolkhoz, not only do not produce an advantage, but can also cause harm, since they inevitably lead to a deterioration of the results of the production activity of the farms. Success in this matter can be ensured only with efficient coordination of the content and rates of stage-by-stage restructuring of the network of population points on the farms with the achieved level of capital and energy availability, labor productivity, technical supply and integration with the processing industry, administration work and the overall effectiveness of production.

The questions that have been touched upon here certainly do not exhaust all the problems in the development of the network of distribution of the population on the sovkhozes and kolkhozes. A more complete idea about the directions for the formation of intrafarm distribution of the population can be given by an investigation of the influence on the network of villages of a complex of factors in their interconnection: economic, social, demographic, ecological and urbanization. Each of these factors exerts an influence on the distribution of the rural population and on the size of population points. And only a comprehensive substantiation can determine the efficient forms of intrafarm distribution of the population in the future. Nonetheless the analysis that has been conducted provides a certain idea about the expedient ways and possibilities of transforming the network of population points of agricultural enterprises.

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PROBLEMS OF FARM WORKFORCE TRAINING, RETENTION EXAMINED

Socio-Economic Factors in Retaining Labor

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 10, Oct 83 pp 28-34

[Article by M. Lavrinenko: "The Role of Socio-Economic Factors in Solving the Problem of Retaining Labor Resources"]

[Text] Agriculture in Amur Oblast, the leading agrarian region of the Far East, is developing under difficult natural and climatic conditions. Almost two-thirds of the territory of the oblast is not very suitable or entirely unsuitable for farming.

In Amur Oblast, in addition to further expansion of the cultivated area through newly assimilated land, kolkhoz and sovkhoz production is being changed over to the intensive path of development. At the present time the area of plowed land has been increased to 1.8 million hectares, and its increase during three five-year plans (1965-1980) amounted to 250,000 hectares. The proportion of plowed land on agricultural areas increased to 74 percent during this period.

During the years since the March (1965) Plenum of the CPSU Central Committee the material and technical base of agriculture has become considerably stronger. Thus the energy capacities of the kolkhozes and sovkhozes of the oblast have increased more than 2.3-fold, and in 1980 amounted to 3.5 million horsepower, the capital availability for production for 100 hectares of agricultural land increased more than four-fold and reached 42,000 rubles, and the absolute amount of fixed production capital for agricultural purposes exceeded one billion rubles. The machine and tractor fleet of the kolkhozes and sovkhozes has been augmented with high-speed and highly productive tractors of the K-700 and T-150 makes as well as other machines.

The essential strides that have been made in the development of the material and technical base for agriculture have provided for an appreciable increase in labor productivity and in the economic effectiveness of kolkhoz and sovkhoz production, have created real possibilities of improving the material well-being of rural workers, and have made it possible to improve the labor

support for agricultural production. Thus during 1965-1980 the level of labor productivity increased 1.7-fold. On an annual average the production of grain and soybeans per one worker employed in agriculture on the kolkhozes and other state farms increased more than two-fold, meat (in slaughtered weight)--1.7-fold, and milk--1.25-fold. Still, the utilization of the existing capacities and reserves for advancing agriculture is being impeded primarily by the shortage of labor force, the lack of skilled personnel, shortcomings in the formation of fixed production capital and the structure of the machine and tractor fleet, and the weak development of the rural social and domestic infrastructure.

The annual shortage of personnel on the kolkhozes and other state farms amounts to an average of 12-15 percent, and for machine operators--25-30 percent.

According to data from sociological research of the labor division of the obispelkom and the Amur Comprehensive Scientific Research Institute of the Far Eastern Scientific Center of the USSR Academy of Sciences during 1977-1980, the main causes of the departure of organized settlers from the kolkhozes and sovkhozes of the oblast are the following (in percentages of the overall number who leave): dissatisfaction with the economic structure and municipal and domestic services--43-47 percent; dissatisfaction with the conditions for labor organization and the lack of work in the specialty--18-20.3 percent; family circumstances--15-21.2 percent; other factors (release because of violation of labor discipline and at the workers' own request)--16.8-16.5 percent. The reason for the departure of other groups of the rural population of the oblast are distributed similarly.

An essential shortcoming in the functioning system of planned relocation consist in that when relocating those who desire this we do not take into account the peculiarities of their way of life and specialties. In recent years, 60 percent of the settlers and more have come from the cities and have no idea about rural life or the specific nature of the labor. As a result there is a considerable reduction in the effectiveness of relocation and there are considerable losses of labor and funds.

On the whole, the migration of labor resources leads to a constantly strained balance of labor in agriculture and, consequently, to the need to increase the training of new personnel. The intensiveness of migration indicates the need to search for ways and measures for retaining labor resources in rural areas.

A most important condition for retaining labor resources is undoubtedly the provision of the population with well-arranged housing. In solving this problem, the Amur villages are falling more and more noticeably behind the norms that are accepted for this. While the norm for providing rural residents with dwelling space has approached the lower limit of the acceptable norms per

capita of population, in terms of the level of actual provision with housing this norm is one-third-one-fourth that of the city norm. At the present time there has been an essential increase in the demand for comfortable housing, which makes construction appreciably more expensive. In order to raise the level of building it is necessary to correspondingly increase the volumes of capital investments as well. In Amur Oblast the cost of housing is 1.46 times higher than the average for the USSR. But the volumes of capital investments that are allotted for these purposes per capita in Amur Oblast exceed the average indicator for the country by only four percent, which bears witness to the imprecise accounting, on the one hand, of factors that increase costs, and, on the other, the growth rates of the population in the various regions of the country.

The development of the social and domestic infrastructure is also appreciably in arrears. At the present time, for example, for one resident of an Amur village the entire complex of cultural and domestic services amounts to an average of 60-65 percent of the efficient (normative) provision, that is, with a norm for all elements of the social and domestic infrastructure one resident in rural areas in the amount of 1,250-1,300 rubles (excluding housing), the actual amount is only 700-750 rubles.

Practice shows that the rates and the scope of the development of the system of cultural and domestic service for the population is basically impeded by the economic capabilities. Providing for one person in the Far East is two-three times as expensive as it is in regions of the European part of the country. Therefore it is of no small importance to make more precise the expediency of expenditures on the development of the complete complex of services in each population point. In a number of population points, especially sparsely populated ones, there is no need and it is economically inexpedient to develop the entire complex of the social and domestic infrastructure. But in Amur Oblast more than one-third of the population points in rural areas are small ones.

Under these conditions for resettlement it is possible to single out two directions for improving the cultural and domestic service for the rural population: the concentration of the population in relatively large villages; the application of more improved and flexible forms of development of the social and domestic infrastructure. In Amur Oblast the former direction has been developed randomly. During the past 20 years (1961-1980) the overall number of rural population points has decreased by one-third as a result of collective settlement even though the population increased by more than 15 percent during that period. This half of development of the system of rural settlement is hardly justified for the Amur area, where even without this the density of the population is extremely low. Moreover, with a consolidation of the population points in terms of the number of residents living in them, the development of social conditions comes into contradiction with the economic requirements for the development of agricultural production, especially farming.

In our opinion, the second direction is more expedient. Among the measures that make it possible to solve the problem of the development of the social and domestic infrastructure in the rural areas more successfully and effectively, the formation of so-called local complexes for cultural and domestic service deserve exceptional attention. On the basis of these, but taking into account the specific production and demographic features of each population point, the elements of the social and cultural life should be created in such a way that within the framework of this group of settlements it is possible to satisfy fully the demands for cultural and domestic services. In addition to the social advantages, the formation of these local complexes for serving the population contributes to reducing the overall production outlays by approximately one-third.

The development of comprehensive regions for planning and plans for the socio-economic development of rural population points in the future is very important. This work has already been started, and therefore a clear-cut program is needed both for the development of the demographic situation and for the implementation of social measures.

In our opinion, the problem of overcoming the shortage of labor force in agriculture in the oblast cannot be solved just by measures for increasing the absolute number of labor resources. With the changeover of agricultural production to an industrial basis, a greater role is played by production-technical and technological factors, and there are simultaneously greater requirements on the qualitative composition of personnel, their cultural and technical training, the search for ways of reducing the amount of non-productive manual labor, and so forth. The development of these directions is an important condition for reducing the expenditures of live labor and solving the problem of providing labor for the kolkhozes and sovkhozes. Here there are considerable unutilized reserves and possibilities. For example, in spite of the comparatively high growth rates in providing the kolkhozes and sovkhozes with agricultural machines, the process of supplying agricultural production with technical equipment is still not complete. The farms do not have a system of machines for comprehensive mechanization of the cultivation and harvesting of soybeans, vegetable raising, feed procurements, and so forth.

The effectiveness of the utilization of tractors decreases as a result of their incomplete provision with machines and implements to go with them. Up to this point we have not solved the problem of completely supplying powerful tractors (K-700, T-150k) with the necessary sets of machines to go with them, which appreciably reduces their productivity. Practice has shown that the most effective utilization of tractors in agriculture can be achieved with an optimal set of agricultural machines, which has a ratio of the balance value of power and mechanical machines of 1:2.5 or 1:3, depending on the natural and economic conditions of the farm (See Sinyukov, M. I., "Planirovaniye i organizatsiya ispol'zovaniya tekhniki v sel'skom khozyaystve" [Planning and Organization of the Utilization of Technical Equipment in Agriculture], Moscow, 1975, p 55).

On the kolkhozes and sovkhozes of Amur Oblast in 1980 this ratio was 1:1.9. The shortage of working machines, in the first place, makes it impossible to utilize high-powered, high-speed tractors efficiently; in the second place, it leads to considerable losses of energy resources; in the third place, it does not contribute to increasing labor productivity and making tractor work less expensive.

Modern new technical equipment, an efficient system of machines, and effective utilization of them make it possible, all other conditions being equal, to provide for increasing labor productivity 1.5-2-fold. If one takes into account that at the present time almost two-thirds of the entire volume of work in crop growing is carried out by tractors, it becomes obvious that it is necessary to implement measures to improve the structure of the machine and tractor fleet and create an efficient ratio between power-driven and working machinery. In turn, these measures will make it possible to improve to a considerable degree the provision of labor for the kolkhozes and sovkhozes and to increase the effectiveness of labor productivity.

While noting the importance of material and substantial factors in the development of agricultural production, it is also necessary to keep in mind such a peculiarity as increased capital availability for production, energy availability for labor, and the observance of the optimal structure of fixed production capital for agricultural purposes. In agriculture of Amur Oblast there are 26-28 hectares of arable land per one worker, which is 2.5 times the average indicator for the USSR as a whole, and during the past 15 years this load has increased by 12 percent.

The increased effectiveness of the utilization of technical equipment and land is directly dependent on the level of the cultural and technical training of personnel. In the current stage of the scientific and technical revolution, a rise in the cultural and technical level of personnel acts as a factor which sharply increases the productive force of labor, and increases its effectiveness many times over. The industrialization of agriculture influences the occupational and skill structure of personnel, new specialties appear, the proportion of workers engaged in mechanized labor increases, and the number of workers engaged in mental labor increases (Table 1).

While from 1965 through 1980 the number of workers employed directly in agriculture on the kolkhozes and sovkhozes increased by 15.4 percent, the machine operating personnel increased by 38.6 percent, and the number of workers with a higher or secondary specialized education almost tripled. At the present time there are more than 100 machine operators and 23 specialists per farm.

Still, the kolkhozes and sovkhozes of the oblast have a disproportion between the quantity of available technical equipment and the number of tractor drivers. The shortage of machine operators makes it impossible to conduct agricultural work during the optimal agro-technical time period and leads to a reduction of the coefficient of shift work and output and to a increase in the norms for the length of the working day.

Table 1. Dynamics of Labor Resources on Kolkhozes and Sovkhozes
of Amur Oblast, Thousands of People*

	1965	1970	1975	1980	1980 in % of 1965
Total workers employed in agriculture	64.9	68.3	75.0	75.9	115.4
Number of specialists with higher and secondary specialized education	1.6	2.0	3.8	4.6	282.0
Number of machine operators (tractor mechanics, tractor drivers, combine operators, truck drivers)	15.5	16.6	20.2	21.4	138.6

*Calculated from data of annual reports of sovkhozes and kolkhozes

Under the conditions wherein the farms are actively being supplied with an abundance of new technical equipment and there is a shortage of personnel, raising the level of their skills becomes exceptionally important, that is, bringing their organizational and technical knowledge into line with the level of technical progress. During the years of the Tenth Five-Year Plan the proportion of machine operators of classes I and II in the oblast increased by 9 percent, and at the present time amounts to 58 percent. Increasing the qualifications of personnel contributes to steadily increasing labor productivity. Our research has shown that for machine operators of class I the level of labor productivity, all other conditions being equal, is 12-18 percent higher than for machine operators of class II and 23-28 percent higher than for those of class III. This difference is even greater for vehicle drivers and animal husbandry workers. But the proportion of machine operators of classes I and II is lower than the optimal level by an average of 12-15 percent.

Analysis shows that technical equipment is utilized productively by those machine operators with greater work experience in their specialty on one farm. For example, for a machine operator who has worked on one farm for more than five years, the output from wheeled tractors is 15-17 percent greater and from caterpillar tractors, 20-24 percent greater, and the expenditure of fuel and lubricants per standard hectare is 14-15 percent less. In spite of this, on the kolkhozes and sovkhozes of the oblast every second tractor driver has a work tenure of less than five years on one farm, and 34 percent have three years and less.

The problem of the shortage of machine operators cannot be considered separately from the problem of labor turnover. We have still not found effective ways of solving this problem successfully. It should be noted that the influx of population into Amur Oblast is quite adequate to fully satisfy the needs of agricultural production for machine operator personnel within two-three years. Each year 300,000 people arrive as a part of organized relocation, 5,500-6,000--from those who have completed specialized vocational and technical

schools and general training for machine operators on the farms, and 800-900 are random immigrants. During the years of the Ninth Five-Year Plan alone more than 40,000 tractor drivers came to agriculture in the oblast. But their actual permanent employment is low, and for this period the increase in the number of machine operators amounted to little more than 2000.

Still, it would be incorrect to assert that the intensive departure of machine operating personnel from agriculture in the oblast is a specific regional problem. A similar tendency is being observed in the country as a whole. Consequently, in addition to measures for attracting machine operating personnel into rural areas and increasing the rates of their training taking into account the modern level of production, it is important to create everywhere conditions for retaining personnel and stabilizing the collectives of brigades, teams and detachments.

Among the socio-economic factors that effectively influence the labor provision and the retention of labor resources in agriculture, increased labor productivity is very important. When it increases, on the one hand, there is a lesser demand for live labor, all other conditions being equal, and, on the other hand, the possibilities of solving social problems increase, including increasing the wages of the workers, and on the whole, prerequisites are created for stabilizing personnel in the areas where they live and work. Even at the present time each percentage point of increased labor productivity in agriculture in Amur Oblast is equivalent to the labor of 750-800 average annual workers and to an economic effect of 3 million rubles. Recently the average annual rates of increase in the level of labor productivity have been 3-3.5 percent.

With increased labor productivity, wages also increase. From 1965 through 1981 the wage level per average annual worker on sovkhozes increased by 80 percent and kolkhozes--by 74 percent. The average monthly earnings of workers and employees of sovkhozes amounts to 190 rubles, and of kolkhoz workers--185 rubles. The earnings of machine operators on both the kolkhozes and the sovkhozes is reaching an average of 230-240 rubles per month, or twice as much as that of people who work with horses.

But it is necessary to emphasize that the majority of kolkhozes and sovkhozes have a lack of correspondence between the rates of increase in the level of labor productivity and the payment for labor, which leads to a violation of the structure of the distributed incomes and, in the final analysis, reduces the possibilities of solving social problems and building up rural population points.

There are considerable reserves for increasing labor productivity and, consequently, wages, and for stabilizing the personnel on the kolkhozes and sovkhozes of the oblast. In the first place, a large part of the agricultural enterprises have still not introduced comprehensive mechanization on

animal husbandry farms; in the second place, the proportion of heavy manual labor remains extremely high; and, in the third place, the level of qualifications of personnel is not as high as it could be.

Thus, the level of comprehensive mechanization in animal husbandry is lower than the average for the country. And every fifth animal husbandry farm does not have mechanized distribution of water, every second commercial dairy farm and every third hog farm does not have mechanized distribution of feed, and almost half of the animal husbandry premises do not have mechanized removal of manure.

More than half of the workers employed in agriculture perform work by hand, and only 38.6 percent with the help of machines and mechanisms. In animal husbandry branches two-thirds of the volume of work is manual labor. Our calculations show that with complete mechanization of all farms and complexes and with well-arranged technology, the labor intensiveness per unit of agricultural output on an average for animal husbandry can be reduced to five-ninths-one-half what it is now.

An important direction for solving the problem of providing labor for agricultural production in the oblast is the implementation of measures for reducing the losses of labor and utilizing labor time completely throughout the course of the year. Analysis shows that in a number of agricultural enterprises intrashift losses of labor reach 10 percent of the overall amount and more. But these losses do not reduce the actual load on the workers in production which amounts to 280-300 man-days on an average for each individual employed in public production during a year. The main reasons for the losses of working time are the imperfect organization of labor, the systems of wages and incentives, the poor discipline of the workers, poorly arranged production technology, and so forth.

At the present time on the sovkhozes of Amur Oblast the reported losses of working time on an average for one worker amount to 4.2 days. At the same time on 44 farms this indicator is two-thirds of the average, which shows the real possibilities of reducing it. But many enterprises have not arranged for accounting for working time. Yet calculations show that reducing intrashift losses of working time by only half will provide for an increase in labor productivity by an average of 7-9 percent.

In order to retain labor resources in agriculture it is quite important to solve the problem of improving the conditions for labor and recreation. According to the established normative, the annual supply of working time on the sovkhozes on an average per worker with a seven-hour working day is equal to 290 man-days. During 1978-1980 on the kolkhozes and sovkhozes of the oblast the actual indicator of time worked during a year by an average worker amounted to 294 man-days, including for tractor drivers and mechanics--292 man-days and for milkmaids--306 man-days, which shows not only the high load for labor, but also the lack of regulation of the conditions for labor and recreation (Table 2).

Table 2. Dynamics of Indicators of Utilization of Annual working Time on Kolkhozes and Sovkhozes of Amur Oblast per 1 Worker, Man-Days

Year	Tractor mechanics and drivers	Truck mechanics	Milkmaids	Workers employed in work with horses and manual labor
1965	259	277	320	176
1970	286	287	309	251
1975	296	290	305	277
1976	296	294	311	280
1977	294	294	308	274
1978	297	296	308	277
1979	289	294	305	270
1980	291	294	303	290

If one compares the indicators of the annual calendar time in agriculture and in industry, the load on agricultural workers is much greater than that of industrial workers (Table 3). All this shows, on the one hand, the importance of improving the conditions for labor and recreation and, on the other, the need for increasing the number of workers and increasing labor productivity as a result of introducing the latest technical equipment, technology and advanced work practice.

In order to improve the conditions for labor and recreation, in our opinion, one should change over to a five-day work week with two days off and a two-shift schedule for the work of animal husbandry workers and machine operators, taking into account the peculiarities of agricultural production. In this connection it is necessary to conduct an experiment with a small number of businesses, brigades and farms of various specializations, and then, on the basis of the experience that has been acquired, to introduce it everywhere. It would be expedient to enlist scientific personnel of BASKhNIL in this work.

Special attention should be given to educational work among youth, who need the daily support of experienced workers. It is important from the first days to teach young people discipline and organization, to help them in mastering their occupational skills, and to enlist the collective in social life.

The formation of a good collective depends largely on the level of training of the management personnel of the enterprises, brigades and farms, their ability to work with people, and their knowledge of modern complicated production and questions of economics and psychology. In Amur Oblast there is a critical problem of training and placing personnel of the middle and higher administrative levels of the kolkhozes and sovkhozes. At the present time in most of the agricultural subdivisions and enterprises the positions of brigade leaders, farm heads and masters who are in charge of divisions, and frequently positions of specialists of various branches, are held by people who do not have specialized training.

The turnover of managers of agricultural enterprises is high. A period of no more than five years has been served by 52.2 percent of the directors of sovkhozes, 68.9 percent of the head specialists, 50 percent of the division managers and 57 percent of the people in charge of animal husbandry farms. Practice convinces us of the exceptional importance of stabilizing management personnel of the kolkhozes and sovkhozes, so that they will have many years of experience and good work habits. This is noticeably reflected both in the economic and in the social indicators of the work of the collective.

Certain problems of providing and retaining labor resources for agriculture in Amur Oblast have specific regional features and can be solved locally, while others require a special complex of statewide measures directly primarily toward equalizing the levels of life of the population in eastern regions of the country and the European part.

In our opinion, the measures of a regional nature whose implementation would contribute to retaining labor resources and utilizing them more effectively in agriculture are the following:

the more rapid rates envisioned in long-range plans for the construction and building up of housing, children's preschool, medical, cultural-educational, sports and other institutions, and also utilities;

strengthening of the material and technical base of rural construction organizations that engage in the construction of facilities for the nonproduction sphere. To this end it would be expedient for two-three years to send (as is done in a number of regions of the country) to rural areas some of the new technical equipment, construction materials and personnel from industrial and urban construction organizations;

the creation of large interfarm enterprises that combine capital investments, the necessary material and labor resources, and funds formed from shared participation of the kolkhozes, sovkhozes and other enterprises and organizations in rural areas;

increased volumes of capital investments and funds for constructing highways for cargo and passenger transportation, for which interfarm associations for construction and repair of roads should be created in all the rayons;

acceleration of the changeover of the kolkhozes and sovkhozes of the oblast to the shop structure of production organization and intrafarm accounting. The introduction of specialized and comprehensive autonomously financed teams which operate under the labor system without a contract and with piece-rate-plus-bonus payment. To do this, each rayon agro-industrial association must create special groups for introducing progressive forms of labor organization and payment;

making the wages and material remunerations for workers of kolkhozes and sovkhozes be dependent on their economizing on live labor per unit of final output that is obtained.

Table 3. Utilization of Annual Supply of Calendar Time in Agriculture and Industry, Average for 1979-1980, Man-days

	Per 1 worker		
	Of industrial enterprise	Of sovkhoz	Of kolkhoz
Number of calendar days	365	365	365
Actually worked	233	282	279
Regular paid vacations	18	17	15
Holidays and days off (including permitted time off)	93	46	55
Unexcused absences	1.0	0.8	0.8
Failures to appear for other reasons	20	19.2	15.2

The implementation of the aforementioned measures, along with others, will contribute to an effective solution to the problem of providing labor force for agricultural production and retaining labor resources in rural areas.

Among the problems of labor resources in the agrarian sector, it is necessary to especially single out the problem of training, distributing and utilizing agricultural specialists. At the present time, on an average for one agricultural enterprise of the oblast, there is an average of 23 specialists with secondary or higher specialized education. During the past three five-year plans alone, their proportion increased more than 2.5-fold. The country is spending more money on training specialists of various branches. Therefore it is very important to utilize these personnel efficiently.

In the modern stage of the development of agricultural production, the functions of branch specialists are gaining more content. Consequently, new forms for their labor activity are also needed. The existing system for the distribution and utilization of specialists-technologists of agricultural production no longer meets the modern demand of production that is developing on an industrial basis.

The scale of production, its branch structure, the abundance of technical equipment, the complicated economic and other kinds of ties within the framework of the agro-industrial complex, and the introduction of the latest technology--all this requires improvement in the system of administration and the application of new forms of organization of production and labor as well as methods for the introduction of the achievements of science and advanced practice, taking into account local specialization of each enterprise and rayon. Moreover, new technological systems, devices and work methods, including those which have been well tested by practice, cannot be applied everywhere without strict testing under specific conditions. They must be seriously tested under local conditions on each farm and in each production subdivision. In this connection, in our opinion, it is necessary to create scientific subdivisions directly in agriculture with oblast and rayon production administrations that are associated with every agricultural enterprise.

We are speaking about forming scientific-technological production teams within the framework of rayon agro-industrial associations which are autonomously financed, which conduct applied scientific research and provide for the introduction of its results into practice (with the methodological guidance of BASKhNIL). For operational work of these scientific teams on the farms, it would be expedient to have introduction groups of a branch nature. These duties could be carried out by branch specialists of the agricultural enterprises.

Training in VUZ's should be arranged to correspond to the new functions of specialists in agricultural production. In our opinion, there is also the problem of changing the system of selecting students for agricultural VUZ's. At the present time a considerable proportion of the places in higher educational institutions that train specialists for agriculture are occupied by graduates of secondary school of cities, who frequently go there not because of their calling, but because of a number of other circumstances. It is no wonder that after completing the VUZ and in subsequent years the majority of them try to change their occupation or transfer to the cities. The prestige of the agricultural occupations and the retention of personnel will increase greatly if the agricultural VUZ's accept mainly boys and girls from rural areas. In order to enlist rural youth into agricultural VUZ's it would be expedient to offer them certain benefits (especially stipends) upon entry. For example, the first people to be admitted should be those who are recommended and sent by agricultural enterprises. Graduate students from rural secondary schools, specialized vocational and technical schools, and also tekhnikums whose average rating upon completion of the schools and tekhnikums is four and more should be admitted to the VUZ without entrance examinations, and all the rest should be admitted under the general policy, and so forth.

Thus a successful solution to the problem of forming and retaining labor resources in agriculture of Amur Oblast, as in the Amur area in general, presupposes, in addition to providing housing and the appropriate cultural and domestic conditions, the improvement of the utilization of labor, improvement of conditions for labor and recreation, the establishment of the optimal duration of the working day, and correct and efficient training and placement of personnel.

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Improving Training, Retention of Personnel

Moscow EKONOMIKA SEL'SKOGO KHOZYAYSTVA in Russian No 10, Oct 83 pp 34-39

[Article by A. Tsar'kov and B. Maksimov: "Improvement of Training of Skilled Personnel and Retaining Them in Rural Areas"]

[Text] The development of the material and technical base for agriculture is organically related to the formation of a principally new and better occupational-skill structure of personnel in mass occupations and specialists with higher and secondary specialized education, as well as a higher level of their general and occupational education and mastery.

Providing agriculture and the entire agro-industrial complex with skilled machine operators, truck drivers, workers for repair and technical servicing of tractors, agricultural machinery and equipment of animal husbandry complexes, and other personnel in industrial occupations--this is one of the immediate measures for implementing the USSR Food Program. No small role is played by improvement of the occupational training of specialists and skilled workers in VUZ's, teknikums, rural vocational and trainins institutions, courses and on the kolkhozes and sovkhozes.

During 1965-1981 essential positive changes were made in the provision of personnel for the kolkhozes and sovkhozes. It is noted in the USSR Food Program that 1.8 million specialists with higher and secondary specialized education are working in rural areas and there are almost 4.5 million tractor and truck drivers. The number of highly skilled workers has also increased in other mass occupations. But many farms do not have enough machine operators and personnel in other mass occupations, and they are especially needed by agricultural enterprises of the nonchernozem zone of the RSFSR, Siberia and the Far East.

Research shows that the reduced need of the kolkhozes and sovkhozes for machine operators and personnel in other mass occupations should be compensated for both by raising the level of skills of the existing personnel and as a result of improvement of all forms of occupational training and the assignment of youth to agricultural enterprises.

The problem of improving the quality of occupational training of skilled personnel always has been and still is one of the key tasks in resolving socio-economic issues related to the development of the productive forces of a socialist society. Regardless of the section a specialist or a highly skilled worker may be in charge of, they always need a profound knowledge of the business and the ability to solve problems from state positions within time periods that are precisely established by production technology.

Advanced experience and practice show that increased rates of development of the material and technical base of agriculture and its provision with high-powered technical equipment and sets of machines for raising and harvesting row and other crops require continuous reproduction of the skilled labor force, and above all managers of the middle level of production, tractor drivers with a broad profile, master adjusters, milking machine operators and other workers in animal husbandry and the sphere of services. These skilled personnel both in the current stage and in the future are the bearers of scientific-technical and social progress in rural areas.

In solving the problem of further increasing the production of agricultural products, an exceptionally important place is assigned to expanding the volumes and increasing the effectiveness of the introduction of industrial technologies for the cultivation of agricultural crops. The application of these technologies makes it possible to utilize material-technical and labor resources more efficiently and to provide for obtaining larger and more stable

yields. While previously industrial technology was applied only for raising corn for grain, now industrial technologies are used for cultivating eleven crops on an area of more than 7.5 million hectares, including corn for grain, sugar beets, sunflowers, flax, potatoes, clover, vegetable crops, lentils and rape.

The application of industrial technologies requires profound knowledge and careful observance of all technological processes. Therefore agricultural agencies are conducting various kinds of seminars and are organizing short-term courses where farm managers, specialists, brigade leaders and machine operators study the peculiarities of the cultivation of agricultural crops with progressive technologies. A machine operator is allowed to work only after training and passing the appropriate tests. In 1983, before the beginning of spring field work, almost 200,000 specialists, brigade leaders and machine operators took training in short courses in the rayons and on the farms.

Increased efficiency of production and labor depends not only on a modern system of machines and industrial technology, but also on the level of the skills of the personnel, the degree of their training and the forms of labor organization.

The qualifications of machine operators and other personnel in mass occupations is a potential possibility which can be realized best depending on the introduction into production of progressive forms of organization and payment for labor. The brigade (collective) contract meets these requirements most completely. In the brigades and teams favorable conditions are created for the achievement of high final results. Such collectives have the necessary means of production and perform almost all the work for raising the agricultural crops assigned to them through their own efforts.

The economic significance of the brigade or team contract consists in that the farm manager guarantees the necessary conditions for production and the payment for products according to previously stipulated rates. Advanced experience and practice convince us that the leading farms that have introduced the brigade (team) contract and comprehensive mechanization and industrial technologies for the production of corn for grain, sugar beets and other crops work more efficiently than do the farms that apply the ordinary technology and are operating with piece-rate payment for labor.

In order to judge objectively the economic effect provided, for example, by machine operators with high qualifications as compared to the less qualified personnel, it is necessary to analyze the results of their labor (output per tractor, expenditure of fuel, wage level, and so forth) in field work and repair of technical equipment on the same farm or in the same rayon. Here it is necessary to take into account the level of general occupational education, the forms of labor organization and production and cultural-domestic conditions, that is, those factors which exert a direct influence on increasing labor productivity and retaining youth in rural areas.

In order to evaluate the effectiveness of labor on the Kolkhoz imeni XXII "yedza KPSS in Suzdal'skiy Rayon in Vladimir Oblast, in 1949 67 machine operators were investigated: tractor operators of class I--21, class II--20, and class III--26, and among the machine operators of classes I and II, 19 percent had secondary and specialized education and 49 percent had incomplete secondary education. More than half of them had completed rural vocational and technical schools at various times.

It should be noted that machine operators who were trained in rural training institutions for vocational and technical training work more productively than do machine operators who have been trained in the course network in production, and tractor operators of class I utilize the machine and tractor fleet 31.6 percent more productively than machine operators of class III do, and 7.9 percent more productively than do those of class I.

The provision of a kolkhoz with skilled machine operators and their increased occupational mastery have a positive effect on increasing the effectiveness of agricultural production. From year to year the farm has high and stable productivity: grain crops--36-39 quintals per hectare, potatoes--150, and vegetables--500 quintals per hectare. Even with the unfavorable weather conditions of 1982, the productivity of grain crops amounted to 39 quintals per hectare.

This was achieved because of the high art of farming, effective operation of the machine and tractor fleet and the introduction of specialized technical service for the machines. Throughout many years the machine operators have utilized the technical equipment very productively. The annual output per conventional tractor amounts to more than 1,400 standard hectares, labor expenditures on repair of equipment amount to 1.42 rubles per conventional hectare of cultivated land, fuel expenditure per conventional hectare has decreased to 6.8 kilograms, and the annual savings of it have reached 30 tons.

Managers and specialists attach great significance to assigning youth to agriculture. In 1982 cinder block buildings of the farmstead type were constructed for youth. The output of these buildings especially for the kolkhozes and sovkhozes of the nonchernozem zone was assimilated on flow lines of the combine of production enterprises for territorial construction in the city of Vladimir.

The increased provision of the kolkhozes and sovkhozes with machine operator personnel in combination with necessary skills makes it possible to raise the level of labor productivity and to reduce expenditures of labor and money per unit of agricultural output. All this requires that the level of skills and education of machine operators and animal husbandry workers correspond fully to the requirements of agricultural production and its material and technical base. But the level of general and occupational education and the culture of many graduates of specialized vocational and technical schools and courses of the kolkhozes and sovkhozes leaves something to be desired.

Investigations conducted on 20 farms of Vladimir, Pskov and Voronezh Oblasts and the Baltic Republic by scientists of the All-Union Scientific Institute of Economics of Agriculture and the Moscow Agricultural Institute imeni Timiryazev as well as specialists of the USSR Ministry of Agriculture and the RSFSR Ministry of Agriculture showed that out of 752 machine operators 135 had a primary education, 200--grades five-seven, 204--eighth grade and 203 tractor operators had received a secondary education at one time or another. The machine operators with a primary or a fifth-seventh-grade general education, as a rule, were middle aged or of pension age. And most of the youth have an eighth-grade education or a complete secondary education. That category of people who for various reasons were unable to acquire the complete education that is envisioned by the law acquired the occupation of machine operator in short-term courses (see Table 1).

From the figures in the table it is clear that more than half of the machine operators who were trained in agricultural vocational and technical schools based on eight classes and with a training period of two-three years master the skills of classes I and II within five years, and with a training period of one year, only 22.2 percent of the machine operators do. And the output per standard tractor for tractor drivers with a secondary education (training period--two-three years represents a 1.6-1.7-fold increase over that of those who have trained for one year in a specialized vocational and technical school or in courses.

Machine operators who have completed secondary agricultural vocational and technical schools acquire profound knowledge and practical skills whose realization makes it possible for them to become highly skilled masters within the first five years when they are working in their specialty. The analysis that was conducted showed that with a higher level of skills and longer periods of professional training, the utilization of the machine and tractor fleet also improves: there are higher shift, day and annual output norms per standard tractor and grain harvesting combine, and expenditures of labor and monetary and material resources per unit of planted area and per one quintal of crop growing products decrease.

The increase in labor productivity and the effectiveness of agricultural production depends to no small degree on the conditions for the labor and life of the machine operators. Thus in order to improve labor organization on the Mir Sovkhoz in Shaturskiy Rayon in Moscow Oblast, working conditions have been changed for the machine operators; a sliding schedule has been introduced with two days off. As the result of the observance of this schedule for days off and regular vacations, the machine operators and repair workers have greater possibilities of utilizing their private time more efficiently: for training, sports and cultural recreation.

As a result of the introduction of team organization of labor on the kolkhoz, the effectiveness of the utilization of the machine and tractor fleet has increased. The shift output per standard tractor during 1976-1981 increased

from 6.7 to 8 hectares, or by 19.4 percent. The proportional expenditure of diesel fuel per one standard hectare with mechanized work decreased from 7.6 kilograms in 1975 to 5 kilograms in 1981, or to two-thirds the previous level. As a result, earnings per one man-day increased from 7.54 rubles to 8.64 rubles.

Table 1. Dependence of Increased Qualifications of Tractor Operators on Forms of Occupational Training and Work Tenure (According to Data for 1980)

(See key below)	1	2	3	Including with work tenure, years											
				Up to 5			5-10			More than 10					
	4	5	6	4	5	6	4	5	6	4	5	6	4	5	6
Courses	327	200	61.1	119	40.0	780	95	68.4	1073	113	82.3	1053			
Specialized vocational and technical schools	425	244	57.4	179	29.0	898	124	71.2	1100	122	92.0	1135			
Of these:															
1 year of training	341	187	54.4	135	22.2	760	96	65.6	1011	110	90.9	1114			
2 years of training	51	36	70.6	27	51.8	1383	18	89.0	1365	6	100.0	1416			
3 years of training	33	23	70.0	17	50.9	1246	10	100.0	1349	6	100.0	1230			
TOTAL	752	458	60.9	298	35.0	850	219	70.0	1093	235	87.2	1095			

Key

1. Number of tractor operators in group, individuals.
2. Of these, in classes I and II.
3. Workers of classes I and II in % of number in group.
4. Number of machine operators in group, individuals.
5. Of these, classes I and II in % of number in group.
6. Output per 1 tractor, conventional hectares.

Bringing order into the conditions for labor and recreation on the farms contributed to increasing the number of machine operators, improving their age composition, and increasing their skills. While in 1975 the proportion of machine operators under 30 years of age did not exceed 32.8 percent, in 1981 it was 53.9 percent. During this period the level of skills of machine operators of classes I and II increased from 49.3 percent to 64.1 percent.

Specialists of the sovkhoz consider this system of organization of the labor of machine operators, animal husbandry workers and workers of engineering and technical and other services of the farm according to a sliding schedule with two days off every sixth day of work to be a transitional system for the introduction of the brigade contract with job-rate payment according to a single order in the main agricultural branches in production and according

to an order for the final results of production in the auxiliary services. The USSR Ministry of Agriculture in conjunction with the USSR State Committee for Labor and Social Problems and the Central Committee of the Trade-Union of Agricultural Workers considered it possible to extend this experience to farms in individual natural and climatic zones of the country, including farms of the nonchernozem zone of the RSFSR.

The brigades and teams working under the system of wages without an order have discovered reserves and possibilities of improving the utilization of the machine and tractor fleet, equipment and machines that are applied on mechanized animal husbandry farms and complexes, and also for releasing unskilled labor force from the branches of agricultural production.

The subsequent changeover of the crop growing branch to an industrial basis is being carried out through raising the level of technical supply, increasing the energy and electricity availability for labor, and improving the skills of the workers as a result of improving the occupational training of personnel in mass occupations in training institutions for vocational and technical education.

But the existing network of vocational and technical schools and the scope of their training of skilled personnel for agriculture do not correspond to the requirements of the kolkhozes, sovkhozes and interfarm enterprises. Thus the specialized vocational and technical schools provide the crop growing branch with only 50 percent of the necessary machine operators and 10 percent of the necessary personnel in the mass animal husbandry occupations.

The existing structure of occupational training of skilled personnel in the system of vocational and technical education and directly in production still does not fully correspond to the requirements of agricultural production. In the overall number of skilled personnel trained for agriculture in agricultural vocational and technical schools and in courses, the majority are tractor operators, combine operators and truck drivers (Table 2). The figures in the table show that the rates of training of machine operating personnel for agriculture under the Tenth Five-Year Plan as compared to the Ninth have dropped somewhat and are continuing to drop.

The following factors assert an influence on the provision of agricultural enterprises with machine operating personnel and personnel in other mass occupations: the level of skills and education of the personnel in mass occupations, and the quality of training of skilled personnel in specialized vocational and technical schools and in courses of the kolkhozes, sovkhozes and enterprises of Goskomsel'khoztekhnika; the changeover from training skilled personnel of mass occupations in specialized vocational and technical schools to training youth in rural occupations and secondary training institutions for vocational and technical educations; the scale of training skilled workers for branches of the agro-industrial complex; the departure of machine operators and other personnel of mass occupations from the kolkhozes, sovkhozes and interfarm enterprises.

Table 2. Training of machine Operators for Agriculture, Thousands of People*

	1970	1975	1980	1981	1981 in % of		
					1970	1975	1980
Total machine operators trained	808	1234	1488	1474	182.4	119.4	99.0
Including:							
Tractor Mechanics and drivers	559	718	806	790	141.3	110.9	98.0
Combine operators, combine mechanics and assistant combine operators	63	118	164	159	252.4	134.7	97.0
Truck drivers	95	184	210	206	216.8	112.0	98.0

*Calculated from: "USSR National Economy, 1922-1982.", Moscow, Finansy i statistika, 1982, p 322.

The augmenting of the kolkhozes, sovkhozes and other state agricultural enterprises with machine operating and other personnel of mass occupations who have a high level of general and occupational education determines the qualitative aspect of the formation of the occupational skills composition of the workers who meet the requirements of scientific-technical and social progress. These requirements are met to the greatest degree by personnel who are trained in secondary agricultural training institutions for vocational and technical education.

The mass changeover from rural vocational and technical schools to secondary training institutions for vocational and technical education began to be implemented in keeping with the decree of the CPSU Central Committee and the USSR Council of Ministers, "On Measures for Expanding the Network of Secondary Rural Vocational and Technical Schools and for Improving Their Work," which was adopted in 1975 when the party and government took a course toward comprehensive mechanization, the introduction of industrial technology into farming and animal husbandry and improvement of the quality of the work.

Therefore in the future too a great deal of attention should be devoted to further improvement of the training of machine operators and other personnel of mass occupations in schools of the system for vocational and technical education.

Additionally, it is necessary to improve the training of machine operators and animal husbandry workers on the farms themselves and at enterprises of the USSR Goskomsel'khoztekhnika, but the task of the courses is primarily related to satisfying the additional need of agriculture for personnel in occupations with a narrow profile that do not require long periods of training and increasing the skills of working youth on the kolkhozes and sovkhozes.

In the system of the USSR Ministry of Agriculture at the present time a great deal of attention is being devoted to raising the class of machine operators and animal husbandry workers. In 1981 7,700 machine operators of the kolkhozes and the sovkhozes and other agricultural enterprises were classified. During the 11th Five-Year Plan it is intended to raise the level of machine operators of classes I and II to 65 percent. The increased skills of machine operators will be provided mainly through graduates of rural vocational and technical schools.

In this connection special concern should be manifested by public education agencies. "Many children do not complete the eighth grade in certain regions of the republics of Central Asia and also the Komi, Dagestan, Yakut and Udmurt Autonomous Republics" (PRAVDA, 19 August 1982). This is to some degree the result of the low level of skills of machine operators who complete short-term courses on the farms.

The low level of education and the short-term training of machine operators and other personnel of mass occupations do not correspond to the requirements of progressive technology or advanced methods of labor organization, and are also to a certain degree an impediment in reaching a high level of skills. As research has shown, machine operators trained in courses take 10-15 years to reach classes I and II, and 10-12 percent of the overall number of them on the farm remain at the initial class level.

Evaluating the condition of the provision of agriculture with skilled labor force as a whole, it is necessary to note that the existing occupational-branch structure of the training of youth for labor requires a redistribution of the proportions among the branches of the agro-industrial complex.

At the present time in training institutions for vocational and technical training they do not train enough skilled personnel for branches that serve agriculture. Of the overall number of workers who are trained, 73.7 percent were field workers, including 70.5 percent--machine operators, 10.3 percent--animal husbandry workers, 1.3 percent--workers for technical servicing and repair of the machine and tractor fleet, 8 percent--workers in automotive transportation, 1.6 percent--workers in electrification and communications, 1.3 percent--land reclamation workers, and 0.8 percent--workers in subsidiary industrial enterprises for storage and processing of products. As a result, the personnel who are in short supply for agricultural enterprises are trained directly in production. Each year on the kolkhozes and sovkhozes alone more than 850,000 people receive occupational training. The main unit in the training of personnel in production is the training-course combines, and there are more than 360 of them in the system of the USSR Ministry of Agriculture.

An extremely important problem which requires an immediate solution both in the current stage and in the future is the occupational orientation of students in general educational schools toward their deliberate selection of an agricultural occupation and the retention of youth on the kolkhozes and sovkhozes. The main role in this work is played by the general educational school which sends eighth-graders into the system of vocational and technical education for acquiring an occupation and for a complete secondary education.

A study of the experience in training rural machine operators in branches organized on the basis of secondary general educational schools in Kalinin oblast showed that here there was a possibility of improving the labor education and training of students and the occupational orientational work with school children (school--family--production). For example, in the Rozhdestvensk school they have created a student brigade of the eighth and ninth grades. The Shlinskiy Sovkhoz has allotted it a plot of land for raising vegetable crops and the necessary technical equipment for practical studies. The graduates of the tenth grade, upon completing secondary school, receive the certificate of a machine operator instead of a certificate of maturity, and they are left to work on the farms. While in 1975 of the 35 graduates of the tenth grade on the farm only six remained, in 1981 20 of the 35 students remained.

It is also remarkable that graduates of secondary branch schools receive more solid knowledge. The examination commission of the Rozhdestvensk secondary school notes that the knowledge of school children that have taken the course in training on tractors and agricultural machines are much more satisfactory than machine operators who have studied at enterprises of the rayon sel'khoztekhnika in the course network.

The need for joint participation of agencies for vocational and technical education, public education and agriculture in order to improve the training of machine operators and other personnel in the remote regions of the nonchernozem zone of the RSFSR and other regions where there are not rural vocational and technical schools is related to the reproduction and retention of youth on the kolkhozes and sovkhozes, and the reduction of material expenditures and financial funds for the construction of new schools, the additional acquisition of equipment, machines and technical training aids, and the insurance of more efficient utilization of the pedagogical personnel of secondary schools.

The problem of retaining skilled personnel in rural areas has now assumed statewide importance, especially in the nonchernozem zone of the RSFSR. The work experience of branches of specialized vocational and technical schools that have been organized on the basis of secondary general educational schools has been approved by the Kalinin party obkom and recommended for introduction in other regions of the country.

Occupational training of youth with a secondary education is the foundation for the formation of highly skilled personnel and, consequently, increased labor productivity and effectiveness of production. Hence it follows that purposive efforts on the part of agencies for vocational and technical education, general education and agriculture in order to improve the quality of training and retain youth in rural areas is a task of primary importance for implementing the USSR Food Program for the period up to 1990 and carrying out the decisions of the November (1982) Plenum of the CPSU Central Committee under the conditions of industrialization of agricultural production.

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EDUCATION

PROBLEMS IN ESTONIAN AGRICULTURAL HIGHER EDUCATION DISCUSSED

Tallinn RAHVA HAAL in Estonian 2 Nov 83 p 2

[Article by Allan Metsa, secretary of the party organization of the social sciences departments, Estonian Agricultural Academy: "Some Problems of Higher Education"; passages in boldface rendered in upper case]

[Text] Every year much that is new enters our lives. How can one keep up with new events and facts? But we, teachers of social sciences, must keep up, since it is our duty to show students truthfully the processes occurring in the society, the advances and problems that arise with accelerating scientific-technical progress. Thus competent oral information is needed, something that can be provided by the leaders of our republic.

Social scientists of the Estonian Agricultural Academy have had the opportunity to participate in the Tartu ECP gorkom's political days where the top leaders of our republic have made very interesting presentations. MEETINGS BETWEEN THEM AND TARTU SOCIAL SCIENTISTS COULD TAKE PLACE EVERY MONTH. The conversation should not be one-sided, i.e., where the social scientists would merely listen to lectures. Problems presented should certainly be discussed together. In that case the social scientists can present their own views and talk about research results. Surely this would be of assistance in the development of our republic's economy, ideological work, and science. On the other hand, the scientists would become more acquainted with practical needs, most of all with the directions that new research should take. The result should be mutually beneficial--science moves closer to practice, practice to science.

The author feels that LEADING PERSONNEL OF THE REPUBLIC VISITING THE UNIVERSITY TOWN FOR A REPUBLIC-WIDE POLITICAL DAY COULD MEET ON THE FOLLOWING DAY WITH TARTU'S SOCIAL SCIENTISTS.

Let us look at some specific problems of university-level specialist training, and propose some solutions.

Collectivization brought about increased requirements for highly trained specialists in ESSR agriculture. This need further increased with the acceleration of scientific-technical progress.

Due to concentration and intensification of production, the number of required specialties has increased. After the collectivization of ESSR agriculture from

1950-1960 the basic specialists in the enterprises included agronomists, live-stock technicians, and veterinarians. The broad application of industrial methods has changed the specialists' composition. For example, production organization is now unthinkable without engineers, economists, melioration specialists. Currently, specialists representing 6-8 fields are working in an average ESSR enterprise, 10-12 in the larger, progressive enterprises. As a result, the number of specialists has increased rapidly. In 1980, 5,900 specialists with higher education and 16,300 with secondary specialized education were working in our kolkhozes and sovkhozes.

Currently the Estonian Agricultural Academy has six departments offering instruction in 11 specialties. The need for specialists with higher education in our agriculture has brought about changes in the structure of departments and specialties. For example, such specialties as economics, accounting, electrification, etc., have been added.

There is reason to think that the number of specialties will continue to grow. Even now there are, for example, too few construction specialists.

A FAR GREATER PROBLEM THAN THE NUMBER OF SPECIALISTS IS IMPROVING THEIR QUALIFICATIONS. The specialists' quality in the most general form depends on how their knowledge and skills meet current and future needs, the requirements of their jobs, and how they use these skills in practice, how they meet the requirements and predict the outcome of processes underway.

How to obtain better personnel for the national economy? In addition to other means (instructors must be more demanding of students) IT IS VERY IMPORTANT TO DEVELOP THE STUDENTS' ABILITY TO THINK AND WORK INDEPENDENTLY WITH TEXTS. This is one of the prerequisites for applying developments of science to production. In production this depends basically on the capabilities of the specialists employed, on their mental ability. Properly trained personnel must be able to correctly assess processes in the economy, and find ways and means to accelerate positive tendencies and remove shortcomings. This is one of the basic tasks of a modern specialist.

The development of thinking ability should, in addition to other means, include a reduction in the student's weekly lecture schedule, so as to give him more time for independent study. Of course, demands should not be reduced but rather increased. In evaluation it is important to pay more attention to the student's ability to think independently in addition to the general level of knowledge. A student may know a lot, but his thinking ability could be considerably below modern requirements. As a result, we would get a specialist with good erudition, but his work in the enterprise could still be ineffective.

THIS PROPOSED SOLUTION WOULD ALSO REDUCE THE INSTRUCTORS' LECTURE BURDEN. They would have more time for research and further training. The national economy should make more use of the highly qualified scholars of the institutions. It would also be possible to be more demanding of the instructors' research. The need to increase research effectiveness was stressed also at the CPSU Central Committee's June 1983 plenum.

MATERIAL INCENTIVES FOR STUDENTS SHOULD BE IMPROVED. THE SIZE OF THE FELLOWSHIP SHOULD DEPEND MORE ON SUCCESS IN STUDIES, SCHOLARLY WORK DONE IN THE UTU (STUDENT SCIENTIFIC SOCIETY), WORK IN THE COMMUNITY, ETC. GREATER AUTHORITY IN THIS FIELD SHOULD BE ALLOCATED TO THE INSTITUTIONS.

It is obvious that an increase in independent study would well lead to a larger attrition rate among students who are incapable. CONSEQUENTLY, ADMISSIONS SHOULD BE LARGER THAN THE NUMBER OF PROSPECTIVE GRADUATES. Students dropping out would work in other fields where they would be of greater use than as poor specialists. The prospect of failure would also increase student responsibility and discipline. This method is even cost effective--according to some calculations society would lose much less by having a certain number of youths drop out in the first, second, or third term than it would gain from the higher qualification of the graduates due to increased thinking ability and discipline. Graduates of higher education institutions work in the national economy for 35-40 years. Of course, results will only be positive if their intellectual potential is fully used by the enterprises. In addition, it is also clear that those youths who drop out of a higher education institution will at least partly use their acquired skills in practical work in the interests of our society.

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DEMOCRAPHY

INSTITUTE DIRECTOR ANALYZES LABOR PROBLEMS IN FAR EAST

Moscow SOVETSKAYA ROSSIYA in Russian 19 Aug 83 p 3

[Article by V. Chichkanov, director of the Economics Studies Institute of the Far Eastern Scientific Center, corresponding member of the USSR Academy of Sciences: "Not Recruitment, But Selection"]

[Text] The Far East is a region of the future. These somewhat hackneyed words are increasingly being confirmed by economic calculations and research on the mineral resources of the region. And when the discussion comes to assimilating this wealth, the first question to arise is: where will we find the working hands? Even now it is clear that the amount of labor resources should increase by approximately one-fourth here in the next 20 years. What a joke, by one-fourth (!). What are the possibilities and ways of achieving this growth?

As before, the needs of this region's economy will be satisfied by people who come to live there from the western regions of the country. But the problem is that the number of people who arrive is almost always equal to the number who leave there. And frequently the workers who go to the Far East do not have the occupations that are needed, and their qualifications leaves something to be desired. For example, during the time when Amursk was being constructed, only 23 percent of the builders who came there under organized recruitment had construction specialties.

And so a paradoxical situation arises here: with an extreme shortage of personnel, the Far East is becoming (as a result of those who leave)...a supplier of labor force for the western regions of the country. In this connection, I suggest that the existing system for recruiting people should be transformed into a system for selecting them. We of the Far East are certainly not indifferent to who comes to assimilate our region. We need not simply working hands, but people with particular occupations. How do we attract them? I shall say at once that the orientation exclusively toward material incentives is an anachronism. It is understandable that nothing in the world is going to make the "rolling stone" responsible. I think that the experience accumulated in the construction of the Baykal-Amur Mainline should stand us in

good stead. There were two-three times as many skilled workers here as there were in Amursk. Skilled people were in the absolute majority in the patronage detachments. And 60 percent of these have two-three construction specialties. Almost everyone who came to the BAM had a secondary or higher education...

The work on the Northern Trans Siberian is now coming to an end. And so large subdivisions with experience in designing and constructing facilities under extreme conditions are beginning to be released. One must think about how to utilize these people intelligently. Sociological research conducted in the eastern section of the mainline showed that most of those who came there do not want to leave the construction site. Some of them have still not thought about the plans for their life in the future. These are precisely the people who should become the object of constant attention.

If one looks further at the BAM experience, it shows that the best results are produced by collective organization of "migrants." Those same people who were in charge of the BAM stations had fewer problems. The detachments fit into the work immediately and regularly fulfilled their production assignments. And, as the same research showed, certain requirements are placed on those who go to the Far East: life experience, the mastery of one or two specialties, good health...these are precisely the same qualities that were required of people, for example, in Ukrstroy, Moldavbamstroy and many other projects.

It is quite understandable that people must be oriented toward a correct combination of moral and material incentives. And the people who are sent here should be socially prepared. And, speaking about the future, one should not give into illusions. It is necessary to represent things as they really are. The Far East is still not very "comfortable." The differences in the provision of social amenities between the eastern and European regions have been taking form for decades. Even though now, for instance, the rates of housing construction are higher here than the average for the RSFSR, the apartment problem is still critical.

When solving the personnel problem we very frequently forget about such an important indicator as the limiting of labor force. It sometimes happens that the enterprises plan all kinds of "enlistment and expansion," without coordinating this at all with the available labor force. But the "influx" of people from outside, as we know, is not unlimited. Labor turnover is a subject for special attention. This phenomenon is intolerable, the more so in the Far East. But in Khabarovsk Kray alone the labor turnover exceeds the average republic level.

Yes, many problems arise when one speaks about assimilating the riches of the Far East. But the main conclusion is already clear: here we need not a random recruitment of people, but selection. And intelligent selection.

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DEMOCRAPHY

ECONOMIST COMMENTS ON STUDIES DEALING WITH MIGRATION

Moscow PRAVDA in Russian 6 Sep 83 p 2

[Article by V. Moiseyenko, candidate of economic sciences: "Migration: Scientific Investigation"]

[Text] By the beginning of the 1980's almost half of the population of our country had changed their place of permanent residence at least once. For comparison: in 1926 migrants constituted only about one-fourth of the population.

On the whole, increased migration is a predictable and progressive phenomenon. It is related to the branch changes in the composition of employed people, the increased labor productivity, improvement of the social structure of the society, and progress in settlement. But the consequences of migration are frequently contradictory. Its scope and direction do not always coincide with those that are socially necessary. This is why improvement of the control of these processes and prompt establishment of changes in the movement of the population as well as prediction of its more remote "echoes" for accounting and planning are most important tasks both for science and for practice.

What are the main directions and results of scientific investigation in this area?

One of the main "routes" of migration of the population is from the country to the city. This has an appreciable effect both on the social and on the economic and demographic processes in many regions. Attention is being drawn to a new tendency--the reduction of the migration from the countryside. As L. V. Korel'† has shown, the migration exchange is depending increasingly on the socio-economic development of rural areas.

†L. Korel', "Peremeshcheniya naseleniya mezhdu gorodom i selom v usloviyah urbanizatsii" [The Population Shift Between the City and the Country Under the Conditions of Urbanization], Novosibirsk, "Nauka," 1982, 191 pages.

The analysis conducted by the author of the motives and factors in migration is important for improving the control of it. It confirms that in order to reduce the migration of rural residents of Siberia to the cities it is necessary: to improve their housing conditions, to increase the technical support for labor; to create favorable possibilities of vocational education of youth; to assist in all ways in keeping private subsidiary farms; and to improve the socio-psychological climate in the collectives.

Frequently migration is the main source of growth of the urban population. And it can be the reason for disproportions in the urban economy. Therefore, it is necessary to take into account more fully the influence of production concentration on the development of cities and the appearance of a new type of employment in them.

To distribute productive forces correctly means to limit the growth of large cities and to develop small and medium-sized cities, as was noted at the 26th CPSU Congress. To do this it is necessary to know: what attracts a person to a settlement of a particular size or type? This problem is considered, in particular, by the authors of the research project "Urbanization and Demographic Processes."* Here are some of its conclusions. The intensiveness of migration depends on the size and administrative status of the city. A special role in the formation of migration flows in the Russian Federation, for example, is played by the oblast and kray centers and the capitals of the autonomous republics. This is explained economically as well--the development of a number of branches in recent years is proceeding through a significant concentration of production precisely in the oblast centers. Incorrect distribution of new enterprises causes a shift of the population which is undesirable for the interests of the national economy as a whole.

Up to this point we have been speaking about migration itself. But there is, for example, also the problem of adaptation, the way the new settlers settle down in places to which they have moved. It is important not only for a person to move, but for him to remain there where he can produce the greatest advantage to the society.

The acclimatization of new settlers in regions which are being economically assimilated is now being actively investigated. The adaptation of migrants to city life is less well studied.

A researcher from Moldavia, S. Dmitrenko, has established that at first it is more difficult for rural migrants in city enterprises than it is for native city dwellers because of the fact that there is no clear-cut orientation for occupational and social advancement, and their socio-political activity is not great.

*"Urbanizatsiya i demograficheskiye protsessy" [Urbanization and Demographic Processes], Moscow, "Finansy i statistika," 1982, 230 pages.

Further development of the problems of migration, including its theoretical aspects, could advance the scientific substantiation of the demographic policy. This is especially important in connection with the decision which was approved by the politburo of the CPSU Central Committee to conduct in 1985 a selective sociodemographic investigation of the population which would make it possible to trace the changes in the composition of the country's population during the time that has passed since the last census and to obtain the data necessary for drawing up plans for the economic and social development under the 12th Five-Year Plan and the more distant future.

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CSO: 1828/23

IMPACT OF MIGRATION ON POPULATION STRESSED

Moscow VESTNIK STATISTIKI in Russian No 7, Jul 83 pp 8-14

[Article by Candidate of Economic Sciences V. Moiseyenko, Center for the Study of Population Problems, Moscow State University imeni M. V. Lomonosov: "The Influence of Migration on the Formation of the Population (According to the Materials of the 1979 All-Union Census)"]

[Text] Under present conditions population migration is one of the most important processes in the socioeconomic development of society. The dynamic development of productive forces, the policy in the area of their distribution and the nature of production relations have a decisive influence on migratory processes in our country. The consequences of migration are substantial and diverse. The changes in the settlement of the population, in its composition by sex, age, social and marital status, education and occupations at the places of the departure and settling in of migrants are connected with it. Much from the consequences of migration has already attracted attention, but much still has to be studied. In particular, for the elaboration of migration policy it is important to identify the long-term trends and laws of migration. Let us examine in this connection the materials of the 1979 All-Union Census from the point of view of the influence of migration on the formation of not only the size, but also the structure of the population subject to the length of residence.¹

It is impossible not to note that the census characterizes migration over a long period (about 70 years), since the migration interval is limited by the length of life of the population of our country at the moment of the census.²

The 1979 census recorded an enormous number of people who have lived constantly at a place of permanent residence not since birth (123.5 million). Thus, 47.1 percent of the population has changed during its life the place of permanent residence, that is, has taken part in migration (while a certain portion did so more than once).³

With a certain conditionality it is possible to compare the data of the 1979 census with the materials of the 1926 census, although one must not fail to take into sufficient account a number of things which pertain to the peculiarities of the consideration of individual categories of the population.

As compared with 1926 the number of people living at a place of permanent residence not since birth increased absolutely and relatively. Thus, the 1926 census

determined their number (the so-called nonlocal natives according to the terminology of those times)--34.7 million (24 percent of the entire population), but all the same it is possible to characterize an incomparably greater portion of the population (76 percent) as settled. It is significant that comparatively low mobility was characteristic to a greater or smaller extent of the population of the entire country. Thus, the proportion of nonlocal natives in the population of the RSFSR came to 25.3 percent, the Belorussian SSR--20.5 percent, the Ukrainian SSR--20.9 percent, the Transcaucasian Socialist Federated Socialist Republic--25.4 percent, the Uzbek SSR--8.3 percent, the Turkmen SSR--18.6 percent.⁴

Consequently, the comparison of the data of the 1926 and 1979 censuses attests to the increased role of migration in the life of society, particularly in the formation of the structure of the population and in its territorial redistribution.

It is difficult to overestimate the importance of this regularity: the influence of the changes in the composition of the population and its distribution on the development of the economy, the change of the way of life of the population, the reproduction of the population and its settlement is so significant. From this standpoint the regional peculiarities of the consequences of migration are of definite interest (Table 1).

Table 1

Composition of the Population Subject to the Length of Its Living at a
Place of Permanent Residence in 1979*
(percent of entire population)

	Proportion of those living at a place of permanent residence since birth	not since birth
USSR.	52.9	47.1
RSFSR	46.1	53.9
Ukrainian SSR	56.3	43.7
Belorussian SSR	55.3	44.7
Uzbek SSR	77.7	22.3
Kazakh SSR.	49.0	51.0
Georgian SSR.	66.7	33.3
Azerbaijan SSR.	76.8	23.2
Lithuanian SSR.	44.5	55.5
Moldavian SSR	67.2	32.8
Latvian SSR	39.6	60.4
Kirghiz SSR	64.1	35.9
Tajik SSR	71.6	28.4
Armenian SSR.	70.6	29.4
Turkmen SSR	73.4	26.6
Estonian SSR.	37.7	62.3

* VESTNIK STATISTIKI, No 7, 1982, pp 77-79.

In a number of union republics the proportion of people who have lived at a place of permanent residence not since birth, that is, migrants, is large. For example, in the RSFSR this indicator is equal to 53.9 percent, in the Kazakh SSR--51.0 percent.

the Lithuanian SSR--55.5 percent, the Latvian SSR--60.4 percent, the Estonian SSR--62.3 percent, the Belorussian SSR--44.7 percent, the Ukrainian SSR--43.7 percent, that is, it is close to the average union level (47.1 percent). In several republics the value of this indicator is much lower: in the Uzbek SSR--22.3 percent, in the Azerbaijan SSR--23.2 percent, in the Turkmen SSR--26.6 percent. Such differences in the composition of the population are a result of the influence of many factors which determined in the end the rate and directions of migration on the territory of the republics: the rate of economic development, the structure of the national economy, the traditions of demographic, including migratory, behavior.

In the future the differences in the composition of the population subject to the length of residence will, apparently, be gradually overcome. The decisive role will belong to the increase of mobility in its various forms. The noted decrease of the birth rate in the republics of Central Asia and Transcaucasia is of considerable importance.

It is well known that the indicators of natural movement and the rate of migration are greatly differentiated over the territory of the country. Thus, the value of the Spearman rank correlation coefficient ($r = 0.8935$) attests to a direct close relationship between the rate of migration in the union republics (according to the data of the 1970 census) and the proportion of those who have lived at a place of permanent residence not since birth. If the overall birth rate (the data of 1970) is taken as the factor attribute, its value will show a quite close relationship ($r = -0.732$). Here one should note a certain conditionality of the correlation, which can express not only the cause-effect relationships, but also the relations of interdependence.⁵ In this case, and this is shown in a number of studies, one structure of the population or another, including subject to the length of residence, can itself act as a factor of the intensification or decrease of migration and the dynamics of the birth rate.

It is well known that in the process of social development, especially in connection with urbanization, the exchange of the population between the countryside and the city intensifies significantly. In all the union republics substantial changes have occurred in the composition of the urban and rural population. The basic trend of such changes is the strengthening of the influence of migration, that is, the increase of the proportion of those who have been in residence not since birth (Table 2).

The structure of the urban population reflects the decisive influence of migration on its formation: the population, which took part in migration, dominates among the urban residents of the country as a whole and the majority of union republics. This trend appears especially clearly when analyzing the composition of the urban population of the republics with a high rate of migration: the Lithuanian SSR and the Estonian SSR (63.5 percent), the Latvian SSR (62.9 percent), the Belorussian SSR (59.9 percent), the Kazakh SSR (59.8 percent), the RSFSR (59.2 percent). At the same time the people, who have lived since birth in the given urban settlement, predominate in the Armenian SSR (64.3 percent), the Azerbaijan SSR (64.1 percent), the Uzbek SSR (62.6 percent), the Turkmen SSR (59.2 percent), the Georgian SSR (58.4 percent), the Tajik SSR (54.4 percent).

Table 2

Structure of the Urban and Rural Population Subject to the Place of Permanent Residence in 1979*
(percent of entire population)

	Proportion of those living at a place of permanent residence			
	urban population		rural population	
	since birth	not since birth	since birth	not since birth
USSR	43.5	56.5	68.2	31.8
RSFSR	40.8	59.2	58.1	41.9
Ukrainian SSR	44.6	55.4	74.4	25.6
Belorussian SSR	40.1	59.9	73.9	26.1
Uzbek SSR	62.6	37.4	88.2	11.8
Kazakh SSR.	40.2	59.8	59.0	41.0
Georgian SSR.	58.4	41.6	75.3	24.7
Azerbaijan SSR.	64.1	35.9	90.9	9.1
Lithuanian SSR.	36.5	63.5	56.6	43.4
Moldavian SSR	42.0	58.0	83.1	16.9
Latvian SSR	37.1	62.9	44.7	55.3
Kirghiz SSR	43.8	56.2	76.7	23.3
Tajik SSR	54.4	45.6	80.7	19.3
Armenian SSR.	64.3	35.7	82.4	17.6
Turkmen SSR	59.2	40.8	86.2	13.8
Estonian SSR.	36.5	63.5	40.5	59.5

* VESTNIK STATISTIKI, No 7, 1982, pp 77-79.

The structure of rural residents subject to the place of permanent residence attests to the dominant influence on it of the "countryside-city" migratory flow. The population, which has not changed during its life the permanent place of residence, dominates in the composition of the rural residents in the majority of union republics. At the same time with the development of urbanization the composition of not only the urban, but also the rural population, in the formation of which the influx of the population is playing a greater and greater role, is changing. Whereas, for example, the proportion of those who have been in residence not since birth in the composition of the rural population for the USSR as a whole is equal to 31.8 percent, in the rural population of the RSFSR it comes to 41.9 percent, the Lithuanian SSR--43.4 percent, the Latvian SSR--55.3 percent. It is characteristic that the differences in the value of this indicator among the republics are significant: in the Estonian SSR the proportion of those who have been in residence not since birth among the rural population comes to 59.5 percent, while in the Azerbaijan SSR it comes to 9.1 percent. As a whole the structure of the rural population subject to the permanent place of residence in the republics with a high level of urbanization approximates the urban structure.

The data of the 1979 census on the breakdown of migrants by the length of residence are of considerable interest. By means of them it is possible to judge the time of the last arrival or to classify the migrants by migratory cohorts. Here it is necessary to emphasize that the number of migrants of the specific cohorts

decreased due to the influence of the death rate and migration. Consequently, the materials of the census (especially in the "earlier" cohorts) show the migrants who "have survived," "have settled down." It is possible to regard these data with some assumption as the result of migration.

For example, the proportion of the cohort with a length of residence of up to 2 years in the total number of migrants is especially great in the Kirghiz SSR (21.1 percent), while the lowest proportion is in the Estonian SSR (13.8 percent), accordingly the cohorts with a length of residence of 2-5 years in the Uzbek SSR come to 20.9 percent and in the Georgian SSR--14.6 percent, 6-9 years in the Kazakh SSR--14.8 percent and the Estonian SSR--12.0 percent, 10-14 years in the Armenian SSR--12.8 percent and the Georgian SSR--11.0 years, 15-19 years in the Georgian SSR and Azerbaijan SSR--11.7 percent, the Uzbek SSR--9.3 percent, 20-24 years in the Georgian SSR--9.9 percent and the Uzbek SSR--6.7 percent and the cohorts of those who have resided 25 years and more in the Georgian SSR--30.5 percent and the Kazakh SSR--12.7 percent.⁶

As a whole the variations between the largest and smallest proportion of one migratory cohort or another (both for the entire population and for urban and rural residents) decrease gradually, reaching the minimum value (1.2-fold) in the cohort of 10-14 years, but then increase. The variations in the proportion of the last cohort, that is, those who have resided 25 years and more, are especially great.

The differences in the structure of the migratory cohorts reflect the territorial peculiarities of the formation of the population during different periods. However, there are also common traits in the ratios of the different migratory cohorts and in their dynamics. One of them is the comparatively large proportion of the cohorts of the last years. Thus, the proportion of the first three cohorts, that is, with a length of residence of up to 10 years, comes for the country as a whole to 47.5 percent, which is considerably greater than the proportion of the next two cohorts (22.0 percent). In the majority of republics the differences in their proportion comes to 1.5- to 2-fold. The large proportion of migrants with a length of residence of up to 10 years attests to the great role in the composition of the residents of the majority of republics of the mobile, to use the terminology of L. L. Rybakovskiy, population.⁷

Another peculiarity of the migratory cohorts is the decrease of the migrants "who have survived" as the time between the year of arrival and the date of the census increases. The migratory cohorts can be characterized by means of average values, for example, the average length of residence. According to the data of the 1979 census this value on the average for the USSR came to 13.8 years.⁸

Since the breakdown of migrants by length of residence is nonuniform, let us estimate the population by means of an average of a different kind--the median.

With the exception of Georgia the median interval, that is, the interval to which half of the total number of migrants, who were broken down by length of residence, falls, was either 6-9 or 10-14 years. The median of the distribution of the migrants came on the average for the USSR to 11.1 years, in the RSFSR--11.4 years, the Ukrainian SSR--12.2 years, the Belorussian SSR--10.0 years, the Uzbek SSR--7.6 years, the Kazakh SSR--8.8 years, the Georgian SSR--15.4 years, the Azerbaijan SSR--9.6 years, the Lithuanian SSR--9.6 years, the Moldavian SSR--8.6 years, the

Latvian SSR--12.1 years, the Kirghiz SSR--8.5 years, the Tajik SSR--9.8 years, the Armenian SSR--11.6 years, the Turkmen SSR--8.8 years,⁹ the Estonian SSR--13.8 years.

In 1926 the value of this indicator for the USSR as a whole came to 8.1 years.¹⁰ Consequently, under the conditions of the increase of the mobility of the population an appreciable increase of the indicator of the average length of continuous residence occurred. Its present level is quite high and, as we see, in the majority of republics exceeds 10 years--the level which is necessary, in the opinion of the majority of researchers, for merging into the composition of the permanent population. As compared with 1926 it has increased for the USSR as a whole by nearly 2 years, which attests to the more favorable ratio of the factors, which stimulate migration, and the factors which are conducive to the adaptation of migrants, their adaptability. At the same time the territorial variations are appreciable. The median of the distribution of migrants subject to the length of residence is the highest in the Estonian SSR (13.8 years), while it is the lowest in the Uzbek SSR (7.6 years). For the more reliable study of these differences it is necessary to analyze the peculiarities of the age-sex composition of the different cohorts. At the same time it is obvious that under the conditions of the increased rate of migration a kind of "accumulation," "buildup" of migrants occurs, which, other conditions being equal (the rate of reinforcement by different cohorts, the degree of adaptation and adaptability of migrants, the level of their death rate), promotes the merging of a portion of the migrants into the composition of the permanent population. In the end this also promotes a longer length of residence.

When analyzing the migratory cohorts the question, which of them is encountered most frequently, naturally arises. The analysis of the distribution density, which characterizes the proportion of migrants per year of residence during the given interval, shows that among migrants the first cohort (with a length of residence of less than 2 years) is most representative. This attests to the great importance of the processes of adaptation and adaptability in migratory processes.

Moreover, the analysis shows a sharp decrease of the distribution density of the cohort of 2-5 years and 6-9 years, as well as the slower decrease of the distribution density of the cohorts which have lived at a place of permanent residence more than 10 years. Such a trend confirms empirically the assumption, which has been expressed in domestic literature, about the 10-year period as a specific limit in the stabilization of migrants, in their merging into the composition of the permanent population. Apparently, no longer further migration, but the death rate influences to a greater extent the dynamics of the cohorts after this period.

The materials of the 1979 census show how the migratory cohorts are broken down by territories (Table 3).

The stability of the structure of the migratory cohorts, as well as the high concentration of migrants on the territory of the RSFSR, the Ukrainian SSR and the Kazakh SSR (83.6 percent) are evident from the data of the table. At the same time the structure of the migratory cohorts is undergoing definite changes. The most striking example is the increase of the proportion of the Kazakh SSR (from 3.5 percent in the cohort with a length of residence of 25 years and more to 7.1 percent in the cohort with a length of residence of 15-19 years), which is connected with the development of the virgin and fallow lands.

Table 3

Territorial Structure of Migratory Cohorts in 1979,* percent

	Entire population living continuously at a place of permanent residence not since birth	including the cohorts						
		less than 2 years	2-5 years	6-9 years	10-14 years	15-19 years	20-24 years	25 years and more
USSR	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RSFSR	59.9	59.4	59.6	58.6	57.9	58.0	59.0	63.6
Ukrainian SSR . .	17.6	16.1	16.5	17.2	18.1	18.5	19.2	18.4
Belorussian SSR .	3.4	3.6	3.6	3.7	3.9	3.4	3.3	2.9
Uzbek SSR	2.8	3.5	3.2	3.0	3.0	2.4	2.2	2.0
Kazakh SSR. . . .	6.1	7.1	6.8	6.9	6.6	7.1	6.0	3.5
Georgian SSR. . . .	1.3	0.9	1.1	1.2	1.3	1.5	1.6	1.8
Azerbaijan SSR. .	1.1	1.2	1.2	1.1	1.2	1.3	1.1	1.0
Lithuanian SSR. .	1.5	1.6	1.6	1.7	1.6	1.5	1.4	1.3
Moldavian SSR . .	1.1	1.3	1.2	1.1	1.1	1.0	1.0	0.7
Latvian SSR	1.2	1.1	1.2	1.2	1.2	1.3	1.3	1.3
Kirghiz SSR	1.1	1.3	1.1	1.1	1.1	1.0	0.9	0.7
Tajik SSR	0.9	0.9	0.9	1.0	0.9	0.8	0.9	0.7
Armenian SSR. . . .	0.7	0.7	0.7	0.8	0.8	0.8	0.7	0.7
Turkmen SSR	0.6	0.7	0.7	0.7	0.6	0.6	0.5	0.5
Estonian SSR. . . .	0.7	0.6	0.6	0.7	0.7	0.8	0.9	0.9

* Calculated according to VESTNIK STATISTIKI, No 7, 1982, pp 77-79.

As a whole the content of the data of the 1979 census on the problem of migration is not confined to the examined questions. But even their concise presentation makes it possible to conclude that the analysis of the materials of the census helps to identify the new aspects of the complex and multifaceted process of migration. The materials obtained by means of the census supplement the data of the current recording of migration. A certain continuity exists in the study of migration in the 1970 and 1979 censuses. All this makes it possible to consider it expedient to study migration by means of censuses in the future as well, although some questions (for example, the composition of migrants with respect to a number of characteristics) need more thorough elaboration.

FOOTNOTES

- Let us recall that the question of the length of continuous residence in the given population center was included in the census sheet. From the total

number of people surveyed two groups were distinguished: a) those who have been in residence continuously since the moment of birth, b) those who have been residing in the given population center not since the moment of birth indicated the year since which they have been living continuously in the given population center. From the instructions on the recording of answers to the questions of the census sheet of the sample census it follows that the continuity of residence did not depend on the having of a residence permit and its nature (permanent, temporary) and on the change of address within the same city (settlement). For people, who had left the given population center for other places of residence for a period of 6 months and more, the time of continuous residence was counted from the day of return from that center, in which the given person lived before returning. Here the moving from one rural population center to another within the same administrative rayon, as well as departure from the given population center to do military service as a conscript and travel abroad and all departures for a period of less than 6 months were not considered as having broken the continuity of permanent residence in the given population center (see: "Vsesoyuznaya perepis' naseleniya--vsenarodnoye delo" [The All-Union Census Is a National Affair], Moscow, 1978, p 58).

2. See "Naseleniye SSSR. 1973. Statisticheskiy sbornik" [The USSR Population. 1973. A Statistical Collection], Moscow, 1975, p 139.
3. VESTNIK STATISTIKI, No 7, 1982, p 77.
4. Calculations according to the data of "Vsesoyuznaya perepis' naseleniya 1926 g." [The 1926 All-Union Census], Vol 51, Moscow, 1931, p 132.
5. See N. Druzhinin, "The Conditionalities of Correlation," VESTNIK STATISTIKI, No 6, 1982, pp 36-37.
6. VESTNIK STATISTIKI, No 7, 1982, pp 77-79.
7. L. I. Rybakovskiy, "Regional'nyy analiz migratsii" [The Regional Analysis of Migration], Moscow, 1973, p 55.
8. The average length of residence was obtained as the weighted arithmetic mean: the attribute being averaged is the length of residence, the weight is the number of migrants with the given length of residence. Calculated according to VESTNIK STATISTIKI, No 7, 1982, p 77.
9. Calculated according to VESTNIK STATISTIKI, No 7, 1982, pp 77-79.
10. Calculated according to "Vsesoyuznaya perepis' naseleniya 1926 g.," Vol 51, p 132.

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DEMOCRAPHY

MIXED MARRIAGES ON INCREASE IN USSR

Riga SOVETSKAYA LATVIYA in Russian 20 Jul 83 p 2

[Article by G. Repinskaya (NOVOSTI PRESS AGENCY): "The Number of International Marriages Is Increasing"]

[Text] "A Kazakh woman 28 years old, 164 cm tall, slim and shapely, with a pleasant appearance, sociable, cheerful, a good housewife, with a higher education. Wishes that an intelligent, kind man who does not lack a sense of humor would write to her. Nationality is of no importance."

This announcement was taken from the "Acquaintance Service" section of the Latvian newspaper RIGAS BALSS. And although the exclusively personal ideas of the author about human merits were reflected in it, it attracted not just a few candidates for acquaintance with the slim and shapely Kazakh woman. Scientists studying questions of the family are interested in how widespread this conviction: nationality is of no importance, is in the country, which more than 100 nations and nationalities inhabit.

In 1959 there were about 3 million international families in the USSR, in 1970--about 8 million, while in 1979--already nearly 10 million. During this time the total number of families in the country increased by approximately 18 percent, while the number of technically mixed marriages increased by more than threefold! Three-fourths of the families, in which representatives of different nationalities have been united, live in the city, one-fourth live in rural areas.

Kazakhstan holds first place among the republics in the number of international marriages--20.6 percent of all families. This is explicable. Envoys of all the peoples of the Soviet Union took part in the development of the virgin lands, which began here in the 1950's. In a decade and a half the population of Kazakhstan increased due to migration by nearly 1.5 million--and this for the most part is due to young people.

In the other republics of the total number of families international families account for:

in Latvia--20.2 percent, in Uzbekistan--19.3 percent, in the Ukraine--19 percent, in Belorussia--16.5 percent, in Moldavia--15.5 percent, in Kirghizia--15 percent, in Tajikistan--13.1 percent, in Turkmenia--12.1 percent, in Estonia--11.1 percent, in the RSFSR--10.7 percent, in Georgia--10 percent, in Lithuania--9.6 percent, in Azerbaijan--6.7 percent and in Armenia--3.6 percent.

These indicators are formed from various factors. From especially individual factors, which reflect traits of a national nature, to objective factors, such as the migratory mobility of the population. In Latvia, for example, the rate of migration is more than twofold greater than in Armenia. As a result the number of people of the indigenous population in Latvia comes to 53 percent, while in Armenia it comes to nearly 90 percent, which, undoubtedly, affects the possibilities of marrying a person of a different nationality.

The fact that Uzbekistan, Kirghizia, Tajikistan and Turkmenia were among the republics which have a quite high indicator of international marriages, definitely attests to significant changes in the consciousness of these peoples. The times, when the requirements of faith, custom and tradition categorically prohibited marriage with representatives of another nationality, while harsh punishment--up to death--awaited apostates, are still within the memory of people of the older generations.

On the other hand, the views on the norms of personal life are all the same changing considerably more slowly than the aims at behavior in society. Thus, it has been established by studies that from 70 to 90 percent of the Uzbeks (with respect to different socio-occupational groups) state that nationality is of no importance for them in business dealings. They do not consider the national composition of their production collective to be a significant factor. At the same time only 20 percent of the Uzbeks in cities responded that they would not object if their closest relatives--sisters, brothers, children--were to marry people of other nationalities. Here many added that the new relatives should observe Uzbek national customs.

However, the picture changes sharply when men or women of different ages respond. According to the data of a questionnaire, Uzbek students--more than 80 percent--accept international marriages and only 16 percent consider them undesirable.

The statistics obtained in new cities of the Soviet Union confirm such a sentiment of young people. The indicator of international marriages in them significantly surpasses the average union indicator. In the city of Brezhnev, for example, a third of all families are international. Here it must be noted that in these cities no longer the newly arrived boys and girls (as happens during the first period of construction), but their sons and daughters, who were born, grew up, are working and studying in these cities, are now getting married.

In new cities the proportion of young people of the indigenous nationality, who are marrying representatives of other peoples, is also increasing. Azerbaijanis, for example, in the Azerbaijan city of Sumgait have contracted international marriages: in 1975--96, in 1976--98, in 1978--111, in 1979--119.

According to some data, international marriages prove to be more enduring. Perhaps the readiness from the start for the fact that different habits and views will exist in the family, has an effect here.

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DEMOGRAPHY

LITVINOV'S BOOK ON LEGAL ASPECTS OF DEMOGRAPHIC POLICY REVIEWED

Ashkhabad IZVESTIYA AKADEMII NAUK TURKMENSKOY SSR SERIYA OБSHCHESTVENNYKH NAUK
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[Review by B. S. Saryyev, doctor of jurisprudence, and Sh. Kh. Kadyrov, member of the USSR Philosophical Society, of the book "Pravo i demograficheskiye protsessy" [The Law and Demographic Processes] by G. I. Litvinova, Moscow, Nauka, 1981]

[Text] A monograph has been published which investigates for the first time the possibilities of utilizing legal methods for achieving the goals of the demographic policy and increasing its effectiveness in light of the decisions of the 26th CPSU Congress.

The first chapter, "The Law and Demographic Policy," considers the evolution of the idea of the possibility of controlling the growth of the population. The interest of the state and, correspondingly, of the law in demographic problems has increased as it has become clear that changes in the level of the birth and death rates and the activity and directions of migration flows play a large role in the life of entire nations and states. Ideas about the patterns in the development of the population from antiquity to the present time are analyzed. A description is given of the methods of influence of the state and law on demographic processes. Under socialism legal regulation of the population encompasses legal means and methods with whose help the state influences the demographic behavior of the citizens in order to provide for optimal parameters of the reproduction of the population. A good deal of attention has been devoted to a substantiation of the importance of accounting for demographic development when planning the main spheres of the life activity of the society. It is pointed out that in the USSR there is a persistent need to develop legislative acts which are directed toward regulating social relations in the area of population. But up to this point they have been outside the sphere of legislative regulation or have been regulated by separate individual normative acts. Legal methods are assigned an important place in the implementation of the demographic policy. In addition to their own significance (prohibitions or incentives) they are used to establish economic methods for regulating the development of the population and the propaganda about these norms performs an important educational function.

In the first part of the work the question of demographic legislation is of the greatest interest. It is understood to mean the totality of legal acts which directly or indirectly influence the dynamics of the population. The subject of regulation of demographic legislation is the social relations involved in the reproduction of the population and its social and territorial mobility.

Demographic legislation consists of elements of various branches of legislation, which are to one degree or another related to demographic processes. But, G. I. Litvinova notes, up to these points these norms remain separated. The negative aspect of this separation consists in the fact that each of the multifaceted relations in the sphere of the demographic behavior of the citizens --the object of some special branch of law--is considered in the narrow sense, from the position of only one branch. Frequently legal norms are adopted without comprehensively accounting for the social consequences of their application, particularly the birth rate. Demographic legislation should be not a mechanical sum of legal acts that are taken from existing traditional branches of law, but a well-arranged independent system.

The author suggests that in the future demographic law may possibly appear as a branch of Soviet law, and demographic legislation will be codified on the basis of this. Of course, certain parts of the branch of demographic law would include provisions from other branches of law and would contain many referential norms.

The question of the need for developing fundamentals of demographic legislation is considered broadly, with substantiated arguments in the book under review. Within this legislation it would be expedient to formulate tasks of the demographic policy in the area of public health, the birth rate and so forth. The author suggests a system of criteria of legal support for the demographic policy. Taking these into account in Soviet legislation would undoubtedly contribute to increasing the effectiveness of the demographic policy.

The suggestion about the need to create a unified authorized state agency which would be in charge of the development and implementation of the demographic policy and could coordinate the work of all ministries, departments and organizations which influence demographic processes in one way or another is extremely interesting. Governmental agencies like this exist at the present time in the majority of states, including socialist states. It is necessary to investigate more extensively the experience in demographic legislation of European socialist countries, creatively developing it with respect to the peculiarities of the demographic situation in the USSR.

The second chapter of the monograph is devoted to a study of the problems of the influence of the state and law on the processes which condition the dynamics of the birth rate. The urgency of this issue is conditioned by the fact that at the present time with a stably minimim level of the death rate, the dynamics of the natural reproduction are determined by the intensiveness of the birth rate. The author discusses the norms of family law which have the greatest influence on the birth rate. Here she refers to new party and governmental documents, including the decree of the CPSU Central Committee and

the USSR Council of Ministers, "On Measures for Increasing State Assistance to Families with Children," of 22 January 1981.

The influence of the social and legal position of women on the birth rate is considered. Solving the problem of achieving actual equality between women and men is related not only to providing for economic independence of women and equal social and cultural opportunities for men and women, but also granting them certain privileges that are related to maternity.

The work under review analyzes in detail the constitutional and other legislative provisions concerning protection of maternity and childhood, the rights and liberties of women, and so forth. Additionally it is noted that not all of the problems in the area of efficiently combining maternal duties with the production activity of women have been fully resolved. The author gives interesting examples to confirm this point.

The employment of women in public production essentially does not have to be a reason for a reduction of the birth rate if conditions are created for a harmonious combination of maternity and work in production, if the level of cultural and domestic service is raised, if intrashift distribution of duties is made more efficient, and so forth. The creation of these conditions presupposes improvement of a broad group of legal norms that pertain to various branches of law, primarily to labor, kolkhoz, family, civil, housing and other areas. In particular, it is necessary for the legislative acts concerning prohibiting the application of labor of women in heavy and harmful jobs to point out the specific time periods and guarantees of their implementation. It is important to think about the question of augmenting the legal norm that establishes the transfer of pregnant women to easier work with an indication of what this work should be and that it should not be harmful to the health. On the basis of medical data one could legislatively introduce a list of branches and occupations that require differentiation of the output norms in terms of sex. "It is not necessary to have the same indicators for men and women in sports," notes the author. Apparently they cannot be required in a number of occupations either. The plan for the social development of each production collective, department and region should include a "women's" division which envisions optimization of female labor in terms of various parameters.

The third chapter of the book under review is called "The Role of the State and Law in Increasing the Life Span and Reducing the Death Rate." It uses extensive legal material to discuss the concern of the Soviet state for the health and social support of the population and protection of the environment.

Large reserves for reducing the death rate and increasing the life span lie in improving legislation to fight against alcoholism and smoking. Abuse of alcohol reduces man's life by 20 years and is a cause of divorce and the appearance of defective children. Smoking reduces man's life span by 6-7 years.

In order to fight against drunkenness and smoking, the author considers it expedient, in particular, to make adjustments to the policy for certifying people who are suspected of abusing alcohol, and not limiting this to people

who have been in medical detoxification two or three times within a year. It would be very important to restore the "Society for Fighting Against Drunkenness and Alcoholism" which existed in our country in the 1920's and to enact local legal norms which are included in the "dry law" for a particular territory. It is necessary to increase the criminal responsibility for the sale of alcoholic beverages to minors and to expand the rights of commissions under ispolkoms for fighting against drunkenness.

The control of migration and the influence of the law on labor resources are the subjects of the final chapter of the monograph. The influence of legal norms on migration processes takes place not indirectly (as is the case with the birth and death rates), but directly. Migration processes are more controlled, and they are purely social in their basis. During the past 20 years the activity and direction of migration is becoming less and less rational in nature. The work reveals the legal possibilities of optimizing territorial shifts of the population. This issue is coordinated with broad guarantees of the social mobility of citizens of the USSR.

Existing legislation reinforces additional rights and privileges for people who have moved to regions that are being assimilated, regardless of where they have come from: from regions with a critical shortage of labor resources or from regions with an excess of labor resources. The author correctly points out that the needs of economic development of rural locations in the Nonchernozem Zone or Central Asia require different attitudes toward those leaving the rural areas. Legislation should stimulate migration from regions with a surplus of labor resources and reduce the migration activity of the population of regions where there is a shortage of labor resources.

The aggravation of the shortage of labor resources requires searching out additional sources of labor force and developing organizational and legal measures for reducing this shortage. These measures should be directed toward: increasing the natural growth of labor resources; legislative change of the limits of working age; the development of legislation that contributes to more extensive enlistment into public production of people of pension age, and also those employed in housework (in republics where their proportion is very high); optimization of migration flows; reduction of the need for labor force, and more efficient utilization of it. G. I. Litvinova discusses in detail the way these areas can be developed, and advances concrete, well-substantiated suggestions which will make it possible to appreciably improve the situation in the area of labor resources.

With all the merits of the first monographic research in the area of legal demography, one must say that it is not without repetitions, omissions and imprecision. Without going into them in detail, let us note, for example, that the amount of the one-time stipend for the birth of a third child (100 rubles) is not, in spite of what the author says, the maximum as compared to the amounts of stipends for the birth of other children in the sequence (p 65). Beginning with the birth of the seventh child, our state pays the mothers one-time stipends of 125, 175 and 200 rubles, respectively. The decree "On Further Increasing the Material Assistance to Less Prosperous Families With Children" and the stipends that are paid for children in keeping with it

do not stimulate an increase in the birth rate, as the author thinks (p 65), but only supports families with many children. G. I. Litvinova equates the concept "support" with "incentives" for families with many children when she points out that the support of many children "can hardly be desirable" (p 65). The author's judgment to the effect that at the present time it is necessary to maximally encourage families with 2-3 children by providing benefits is not clear enough (p 66). What should happen to families who have more children than this? One can argue with the statement that among the indigenous population of Central Asia "so far there is no clearly expressed tendency toward a reduction of the birth rate" (p 93). This tendency can be observed and it is especially clear among urban youth.

The criticism of the thesis of O. Atamirzayev and A. Atakuziyev about the traditionally weak territorial mobility of the local population of Central Asia cannot be considered to be altogether correct. Still, the expression of the "traditionally weak territorial mobility" if it means the adherence of the indigenous population to the traditional way of life is actually true. This factor plays a retarding role in the territorial movement of the indigenous population of Central Asia to outside the region. In terms of its significance in our region, it is stronger than the factor of cultural and domestic service, which G. I. Litvinova says is one of the main ones for accelerating migration. Thus, for example, the migrational mobility of Turkmens is one of the weakest in the Union, but the indicator of cultural and domestic service here is also one of the lowest. But these shortcomings do not diminish the great scientific and practical value of the monograph. It will be useful to workers of legal agencies, demographers, teachers in VUZes, students, graduate students and a broad group of readers.

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